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PROGRESS IN THE TREATMENT OF MENTAL DISEASE*

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I deeply appreciate the privilege and the honor of being permitted to pay homage to the memory of a great man. Dr. Chaillé was a man of action and held to the Hippocratic dictum, "Where there is love for humanity there will be love for the profession." It is with a feeling of his spiritual presence that I venture to recount the advances that are being made in the treatment of mental diseases.

The history of psychiatry truly represents the history of civilization. Growth in this field has been slow and painful. Cruel and tragic centuries darkened the pages of progress but the trail blazers of psychiatry could not be denied. From the magic and sorcery of antiquity to our present knowledge of cerebral function represents a long and hard earned advance. Today we know much of the chemistry, and the functions of the nervous system but a century hence the facts of today may be the fallacies of tomorrow. The history of psychiatry contains many sad chapters that we would gladly forget. In recalling them, the achievements of the crusaders of progress stand out more clearly in their true glory. Today, as in ages past, the care of persons afflicted with mental disease presents a challenge to the physician and to society.

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Our knowledge of prehistoric man is limited, but if the historians are correct, our ancient forebears found time between mysterious incantations and black magic to conceive trephination of the skull. At this late date the reasons for their use of trephination are not entirely clear but if conjecture is correct it was used not only because of local injury to the head but for the purpose of liberating evil spirits from the poor victims of some demoniacal illness.

The dawn of the ancient period found man the victim of superstition of magic and of sorcery. The golden age of Greece, with Hippocrates, Plato, Aristotle, and other great philosophers, brought some light to the confused concept of mind and body. Then as now customs died hard, especially when an acknowledged authority such as Galen failed to keep step with the advances of his time but held steadfastly to the traditions of the past. Whatever slight progress had been made up to the time of Galen seems to have come to a standstill. The following centuries were dark years for psychiatry, if not for the world with its wars, its black death and its witches.

Time moves on, and as we turn the pages of the succeeding centuries we see that the many actors on the ever changing stage of life left but little favorable imprint on the psychiatric records of the time. Step by step some inward urge would make itself felt. Here and there a light would penetrate the mist. The world was straining with its pent-up energies and needed but a spark to kindle the glowing embers of conquest. In rapid succession important

events paved the way for a general wave of progress. Gunpowder, printing, Columbus, Copernicus and Luther represent but a few of the stirring forces that were revolutionizing the conduct of man. In this period of turmoil and strife, patients who were mentally ill fared poorly, and psychiatry was slow to follow in the footsteps of progress and remained shrouded in mystery.

It must be kept in mind that psychiatry as a science was as yet not born. Social necessity determines that those who are mentally ill should be isolated and today we hang our heads when we recall the horror and tragedy enacted in the name of science. Pinel, Tuke and Esquiral saw the injustice of the then prevailing methods for the care of those who were mentally afflicted and they stand today as the disciples of the humanitarian care of these unfortunate people.

The nineteenth century might well be looked upon as the beginning of psychiatry as a separate science. The main strides during this period consisted in improved institutional care of insane persons. It was necessary to educate society to the need of such care and in this country Dorothea Dix will forever be honored for her unceasing efforts and devotion to this cause. The improvement in the care of patients who were mentally ill was a great step forward but during this period relatively little progress was made in the development of new therapeutic measures which proved to be of any lasting value.

SPECIAL THERAPY

At the turn of the present century renewed efforts in therapy were made along many lines, but progress appeared to meet insurmountable obstacles and failure seemed inevitable. Just as the darkness was sweeping on to oblivion, a bright ray of light appeared upon the fading horizon. In 1917, Wagner von Jauregg announced the successful treatment of general paralysis of the insane by the use of malarial therapy. The stimulus given the psychiatrist by von Jauregg's work was to last for many years. True enough, he was treating an organic disease, but the question arose as to whether other mental diseases might not have an organic basis. Immediately many and varied studies were undertaken. The body structure was carefully searched for possible abnormal patterns. The organs of the body were weighed and the anomalies in development were noted. Anthropometric indexes revealed certain bodily types, and the pyknic habitus (short and fat) and the leptosome habitus (tall and thin) took their place in the classification of individuals. These advances, however, failed to unveil any hidden therapeutic secrets. Not to be discouraged, psychiatrists turned their efforts to physical and psychic therapy. Hospitals were equipped with departments for physical therapy, occupational therapy, and psychotherapy. Efforts were made to remove foci of infection and the causes of so-called auto-intoxication in the hope of aiding patients who had mental diseases. All of these procedures placed the treatment of mental disease on a high plane and added much to the comfort of the patient. It also served to continue the slowly waning stimulus which had resulted from the inspiration received from the work of von Jauregg. Vienna's influence was also kept alive by the students of Freud, who carried his teachings to all corners of the world.

In the early part of the decade 1930 to 1939 inclusive, the use of various forms of prolonged narcosis was instituted in the hope of aiding the psychoneurotic and the psychotic patient. Paraldehyde, chloral hydrate, amytal, and similar drugs were employed to produce the long sleep. It was hoped that this type of treatment would lull the misshapen fantasies and bring peace to the disturbed mind. Although some favorable results were obtained with this form of therapy, it is now employed in certain mental states, mainly, as an aid to mental analysis. During these years other forms of therapy came and went without leaving a lasting impression, either on the patient or on investigative workers.

The glory that was Vienna's was again to claim the attention of the world. In the very halls made sacred by von Jauregg, inspiration still lingered and the spark was again

ignited by Sakel, who in 1934 reported his results with hypoglycemic therapy. It is not necessary to dwell on the technic of this therapy. The enthusiasm which it probably rightly deserved served as a stimulus for another epic of concerted effort in an attempt to solve the riddle of achieving an improved therapy for patients who are mentally ill. That hypoglycemic therapy was productive of certain worth-while results cannot be denied. The underlying physiologic effects upon the mental status of the patient remains, however, a debatable question. Chemical studies carried out on patients who received this type of therapy gave no definite clue as to a possible chemical basis on which good results might be predicated. The rationale of hypoglycemic therapy was by no means clear. Could the favorable results be explained on a chemical basis? Fortunately, psychiatrists realized their limitations and turned to the chemist for help. Graciously chemists gave of their time and skill and soon there appeared treatises on the chemical studies of schizophrenia, and manic-depressive psychosis. Although no favorable conclusions could be drawn from these intensive laboratory studies, they served to inspire the chemist and aroused much needed interest in the chemistry of the nervous system which had been more or less neglected.

That hypoglycemic therapy is not without risk was demonstrated both in animal experimentation and in postmortem studies of patients who died during the treatment. As it appeared that convulsions contributed to the beneficial effect of shock therapy, search was made for other convulsant drugs. It was at this time that Meduna introduced the use of metrazol in convulsive therapy. The results and the ease of administration in metrazol therapy compared so favorably with the results of insulin shock therapy with its complicated technic that metrazol soon became the drug of choice. The method of metrazol convulsive therapy is relatively simple and need not be elaborated at this time. Various theories as to the mode of action of the drug have been proposed but none of these have been entirely satisfactory. Some investigators have gone so far as to consider metrazol therapy as a specific means of discharging the tension which may be confined within the diencephalon in cases of melancholia. Metrazol has not been the only drug that has been used in convulsive therapy as triazol, sodium chloride, camphor, picrotoxin, electric shock and other agents also have been employed to produce convulsions.

In spite of some excellent results obtained with metrazol convulsive therapy, especially in cases of depression, the occasional occurrence of dislocations or of fractures dampened the enthusiasm for this type of therapy. To overcome the severity of the convulsions and to protect the patient from possible dislocations or fractures, various safeguards were instituted. Spinal anesthesia was tried for a time but its use has been discontinued. Bennett and other investigators have administered curare intravenously to produce muscle relaxation. Erythroidine is being used at the present time by various investigators. These agents, while helpful in preventing complications during metrazol convulsions, are not without danger and do not overcome the patient's dread of the treatment.

During the years under consideration, therapeutic attempts were not confined entirely to shock therapy. Certain investigators were not only unwilling to accept the rationale of such therapy but were approaching the problem from different angles. Time will not permit a consideration of all the various phases of therapeutic trial which have included the inhalation of nitrogen and of carbon dioxide in the hope of producing a change in the oxygen content of the brain. That anoxemia plays a role in convulsive therapy is a common expression, but just how it affects mental patterns is not known. Among other therapeutic measures one must mention the use of transfusions of whole blood, the use of hematoporphyrin, the employment of various forms of fever therapy and the use of benzedrine, histamine and similar drugs. The physiologic chemist had not been idle and he added to our knowledge of the metabolism of potassium, sodium, and chlorides.

Naturally no subject that is related to the functions of the central nervous system would be complete without reference to the endocrine glands and to vitamin therapy. Hormone or glandular therapy has run the gamut of use and abuse. Certain it is that the endocrine glands play a role in the normal function of the body but just what influence they have in the psychoses or the psychoneuroses is not too clear. Gonadotropic substances have been employed with varying results. The claims that have been made for theelin in the treatment of menopausal depression have not been clearly established. It does appear, however, that at times the use of theelin or similar substances in the treatment of depression occurring during the menopause does produce some benefit. At the present time, the use of testicular hormone is recommended in the treatment of depression occurring in the male climacteric.

During the past few years, the use of vitamins has become more or less fashionable and they do have a place in the treatment of certain mental states associated wih vitamin deficiency. As yet we have no clear conception as to the variability of the mental symptoms resulting from vitamin deficiency, and the diagnosis of these mental states is no easy task.

ELECTRIC SHOCK THERAPY

Two of the more recent steps in the progress of the treatment of mental disease are electric shock therapy and the surgical approach to the problem. In 1938, Cerletti and Bini announced their method of electric convulsive therapy in cases of schizophrenia. The technic is that of passing an ordinary (alternating) current through the posterior part of the frontal lobes (area 6). Baldes, of The Mayo Clinic, has aided in the construction of an electric apparatus in which the current can be accurately controlled so that the patient may receive the amount of current that is specified. From 300 to 600 milliamperes are passed through the frontal lobes for a tenth of a second. The threshold for convulsions is somewhat variable, but rarely is less than 300 milliamperes. The convulsions are considerably milder than those produced by metrazol. To the amazement of investigators, the patient receiving electric shock therapy does not suffer from pain. The patients will return repeatedly for the treatment without any apprehension which is a common feature when metrazol is used. With the electric shock there is an amnesia for the period of treatment and the amnesia may last an hour or more. It is conceivable that a subconvulsive dose may prove to be as satisfactory from a therapeutic standpoint as a convulsive dose. The severity of the convulsive attack can be rather well controlled by the amount of electricity that is passed through the brain. Animal experimentation has demonstrated that twenty to thirty times the convulsive dose may be passed through the frontal lobes without producing ill effects. At The Mayo Clinic we have been using this form of therapy since the first of September. As yet we are unable to report upon the therapeutic results but it is our impression that electric shock therapy will replace metrazol convulsive therapy.

SURGICAL THERAPY

That a surgical approach to the treatment of mental disease might possibly be developed was a thought entertained for many years by Dr. W. J. Mayo. To quote him: "If necessary we shall perform exploratory operations on the head at an early stage of disease and turn the light of day onto many of the pathologic conditions of the brain." It was not until 1936 that any serious surgical attack upon the problem of mental disease was instituted. In that year Monez introduced the operation of prefrontal lobotomy for the surgical treatment of certain mental states. The success reported by Monez prompted Watts and Freeman to adopt this surgical procedure and they, too, reported gratifying results, especially in cases of agitated or anxiety states. Since January, 1940, J. G. Love, of The Mayo Clinic, has performed this operation in seven cases. He obtained excellent results in two cases, and fair results in two cases. In two cases the patients were not improved and in one case the patient was operated on recently and a final report is not possible.

The purpose of the operation is to divide the subcortical association fibers in the frontal lobes and thereby remove the inhibitory function of the anterior poles of the cerebral hemispheres. By destroying the association pathways in the frontal lobes the patient's agitation, apprehension and state of tension are supposedly relieved. As is the case in electric shock therapy, it is probably too early to express any definite opinion regarding the results obtained with surgical treatment of mental disease.

CONCLUSIONS

I wish to emphasize that my real purpose in reviewing the progress that has been made in the treatment of mental disease is not to justify any one form of therapy but to call attention to the tremendous interest in the effort to relieve human suffering. It is indeed possible that many of the present forms of therapy will give way to more successful methods, and at a future time we may look back with shame when we recall some of the harsh methods of therapy that are in use today. It is probably true that never before has there existed such a hopeful attitude toward the problem of mental disease. The enthusiastic efforts of the many working in various fields of science should in some small way be rewarded. Certain it is that the future of psychiatry never looked more hopeful than it does at the present time.

I trust that in this humble manner of tracing for you the progress that is being made in the treatment of mental disease I have in a measure fulfilled my obligation of keeping alive the gospel of humanism and progress, which were so much a part of Dr. Chaillé.

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POLYRADICULONEURITIS

THE GUILLAIN-BARRÉ SYNDROME A CASE REPORT*

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The purpose of this case report is to direct attention to a condition which is relatively rare and which, depending upon one's familiarity with the syndrome, may be easily recognized or very puzzling.

Polyradiculoneuritis, which is also known as the Guillain-Barré syndrome, was first designated by this name by Guillain,[1] in 1936. He claimed that he had described the condition, with Barré and Stohl, as a definite clinical entity in 1916, but the same or some similar syndrome had previously been reported under a number of other names.[2,3] Thus Osler[4] in 1892 described "acute afebrile polyneuritis." Patrick,[5] in 1916, reported 29 cases of polyneuritis in which facial diplegia was a feature, and observed that the toxic agent was peculiarly noxious to the seventh nerve. He pointed out that this type of paralysis is nearly always bilateral and very intense, and that the face recovers from it more slowly than the extremities.

A fair index of the incidence of polyradiculoneuritis may be gathered from the report of 35 cases observed in The Mayo Clinic from 1918 to 1936.[2] It is possible that the disease is more frequent in Europe, or even mildly epidemic there, as one author[6] reported 55 cases over a three year period.

Cobb and Coggeshall,[3] in an excellent short review of the whole subject of neuritis, have pointed out that more detailed study and more accurate classification of

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the disease is needed. The case of "acute infective neuritis" reported by them is typical of the case reported in this communication. Gilpin and his associates[2] have also voiced objections to the present classification of the disease and the confusion of its nomenclature.

Guillain[1] described polyradiculoneuritis as "a syndrome characterized by motor disturbances, loss of tendon jerks, with preservation of cutaneous reflexes, paresthesias with slight disturbances of objective sensibility, tenderness on pressure of the muscles, little change in the electrical reactions of the nerves or muscles, and *noteworthy hyperalbuminosis of the cerebrospinal fluid in the absence of cytologic reaction (albumino-cytologic dissociation).*" He believed the condition to be toxic in origin and regarded it as possibly a virus disease. The albumino-cytologic dissociation is an important diagnostic finding and, according to McIntyre,[7] definitely differentiates the disease from other forms of neuritis.

PATHOLOGY

The pathology is degenerative in type. Bradford, Bashford and Wilson[8] have described degeneration of anterior and posterior horn cells, and of spinal ganglion and motor cells of the brain stem and cortex; round cell infiltration about the anterior horn cells without perivascular infiltration; and proliferation of ependyma of the central canal. These authors were able to reproduce the disease in monkeys.

Viets[9] reported a case in which the cortex was normal. The seventh nerve nucleus showed swelling and dilatation of a few cells, chromatolysis with displacement of the nucleolus, swelling of the anterior horn cells, loss of Nissl granules, displacement of the nucleolus, and engorgement of the vessels throughout the cord. There was no perivascular infiltration and the meninges were normal. Wallerian degeneration was present in the nerves; it was irregular in distribution but not massive. There was occasional neuritis, with inflammatory exudate, round cells and hemorrhage, but the findings were not uniform. McIntyre reported practically the same findings.

SYMPTOMS

The onset is usually sudden. The patient complains of tingling and weakness of the extremities, the lower extremities usually being affected first. On questioning, the physician can nearly always elicit a history of some sort of acute infection in the not far distant past, frequently of an upper respiratory infection which has disappeared. The paresthesia may remain of a trifling nature. Pain is occasionally severe, but is usually absent. The sensory phenomena, in short, are not marked, but the motor disability may progress rapidly, as the weakness goes on to a paralysis of the flaccid type and involves the upper extremities and the face. The cranial nerves, except for the seventh, are generally spared, but choked discs may be present. The muscles are tender and may show fibrillation after light percussion.[10] Sphincter control remains intact. The course is afebrile.

LABORATORY TESTS

All laboratory tests may prove normal except electrical examination, which will elicit degenerative reactions in varying degrees. The spinal fluid picture is typical. In Gilpin, Moersch and Kernohan's[2] cases, for instance, the proteins ranged from 100 to 800 mg. per 100 c.c. of fluid; the cells were lymphocytes and the counts were low. McIntyre[7] found albumino-cytologic dissociation in all his cases.

TREATMENT

Although vitamin therapy may be useful, the treatment is chiefly symptomatic and is predicated on the nature and course of the individual case. Some illnesses may be short and mild, others long and severe, and some may be fatal. McIntyre recognizes four classifications: (1) Rapid onset, rapid recovery, possibly seventh nerve involvement; (2) steady progress, death; (3) prolonged course, incomplete recovery; (4) prolonged course, death.

CASE REPORT

J. W. R., a 36 year old white male, an electrician by occupation, was first seen March 23, 1939. At

this time he complained of weakness and numbness of the legs of four weeks' duration. When his symptoms began he had felt as if he had a cold and his head had been stopped up. The weakness in the legs was associated with severe pain in the back and generalized weakness. He had continued work for a few days after the illness began, but was obliged to stop because of increasing weakness in the legs which made him almost unable to walk. Some days later his feet and legs felt numb to the level of the knees; he described the sensation as "his feet and legs being asleep."

He was put to bed by his physician, who instituted physiotherapy. At first he could not feel the massage, and could not distinguish between hot and cold water. He became so weak that he could barely get out of bed to go to the bathroom, but was never completely paralyzed. After about two weeks some improvement was noted. Sensory improvement outstripped motor.

The patient had no cranial nerve or sphincteric disturbances. He denied any history of syphilis. He had not been exposed to gas or heavy metal. He drank city water.

NEUROLOGIC EXAMINATION

The musculature of the upper extremities was weak. The weakness was obvious to the examiner, but the patient had not been aware of it until it was demonstrated to him. The legs were extremely weak. The patient could scarcely walk without help, and at the best could take just a few steps. He could not raise his feet clear of the floor and moved with a sliding, shuffling gait. He could not raise his weight on his toes or his heels. He could not stand on either leg alone. He could not walk heel to toe, and he could not hop. When he lay flat he could raise his leg only about 12 inches. His speed was reduced in proportion to his strength.

Occasional weakness and uncertainty were evident when the patient spoke, and probably indicated bulbar involvement. Vertigo was experienced on sudden changes of position. The cranial nerves were otherwise normal.

Sensory examination showed no anesthesia but a marked reduction to all modalities, both deep and superficial, in the feet and legs, gradually fading off about the knees, although there was no definite level. The same condition was evident, but to a lesser extent, in the upper extremities. The patient had not realized this condition, just as he had not realized that motor weakness was present in this area.

The knee jerks were absent. Other tendon reflexes were present but sluggish. No abnormal reflexes or clonus could be elicited, but, strangely in view of his flaccidity, the patient was able to set off a spontaneous sustained clonus if he could get his foot into a certain position. The examiner was never able to reproduce the clonus.

Superficial reflexes were present, active and equal. There was extreme incoordination and ataxia of both gait and station. The remainder of the examination was negative.

Urinalysis showed the urine to be straw-colored and acid in reaction. The specific gravity was 1.009. Albumin, sugar, indican, acetone and diacetic acid were all absent, and the smear showed only amorphous sediment. Sixty per cent of the phenolsulphonephthalein administered was excreted during the first hour and 5 per cent in the second, making a total of 65 per cent for the two hours. Examination of the blood showed 4,450,000 red blood cells and 6,500 white blood cells per cu. mm. Ten per cent of the leukocytes were small and 5 per cent large lymphocytes, 58 per cent neutrophils, and 1 per cent eosinophils. The hemoglobin was 90 per cent and the color index 1.0. No malaria plasmodia were found. The coagulation time was two minutes, 20 seconds. The Wassermann, Kahn and Klein tests were all negative. Chemical studies showed the nonprotein nitrogen of the blood to be 34.2 mg. per cent, urea nitrogen 17.1 mg. per cent, uric acid 3.5 mg. per cent, creatinine 1.5 mg. per cent, and dextrose 86 mg. per cent. The spinal fluid was clear and under pressure of 120 mm. water. The cell count was 2-3. The Wassermann reaction and colloidal gold curve were negative. The total protein was 92.6 mg. per cent.

DISCUSSION

The findings in this case justified the diagnosis of polyradiculoneuritis. The patient was put on a general supportive regimen, including a high intake of vitamins, and was discharged with a fair prognosis. His physician reported his progress as steady, and said that he was practically well when at the end of six months he moved to another locality and could no longer be followed up.

SUMMARY

A typical case of polyradiculoneuritis has been reported. The disease is distinctly unusual in America, but diagnosis is possible if the syndrome be borne in mind.

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FATAL PARALYSIS FOLLOWING ANTIRABIC TREATMENT

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INTRODUCTION

The antirabic treatment in practically all cases is neither accompanied nor followed by complications of any importance. There is usually found only a slight degree of local or constitutional reaction; occasionally there is a marked urticaria. These are the only discomforts likely to be encountered. There is, however, a rare complication, the so-called "treatment paralysis" which has been noted since three years after Pasteur instituted his method of vaccination, the cause and nature of which is still not fully understood. The question often arises, after a large group of people are exposed to the bite of a rabid animal, whether or not all of these persons should receive the antirabic treatment. Those actually presenting wounds should have them cauterized with fuming nitric acid and should then be given the fourteen daily antirabic inoculations.

The rabies virus is contained in the saliva of the rabid animal, reaching the salivary glands by way of the nerves. The disease may be transmitted when the injected saliva comes in contact with a break in the skin or mucous membrane. This usually occurs in man from the teeth or claws of the infecting animal. The infected saliva needs only to get on a break in the skin or mucous membrane. It is not necessary that the virus penetrate the deeper layers of the skin. Therefore in those in whom infection is doubtful or who wish to be treated merely as a matter of precaution, one should weigh carefully the advisability of giving the inoculations, bearing in mind the incidence of treatment paralysis.

INCIDENCE

According to McKendrick,[1] out of a total of 115,859 persons treated (mostly in 1932) there were 22 paralytic accidents or one in 5,266, with five deaths out of the 22. The figures relating to accidents covering other analytic reviews by McKendrick show a total of 126 paralytic accidents in 635,142 persons treated; (0.02 per cent) or one in 5040 with 37 deaths in the 126 accidents. It appears that the liability to accident after treatment by live vaccines is four times as great as after treatment by killed vaccines, and eleven times as great as after treatment by heated vaccines.

ETIOLOGY

The etiology is still not definitely known. It is thought that alcohol, syphilis, neurasthenia, hysteria and other conditions which lessen the resistance of the nervous system, are predisposing factors. Since paralytic accidents occur so rarely an individual idiosyncrasy on the part of the patient must be assumed. It is found more frequently in males, and in individuals of the professional type rather than of the laboring type. Overexertion during the course of the injections plays an important part in bringing on the neurologic symptoms. It does not occur in children. Individuals bitten by rabid animals are no more prone to the affection than those bitten by non-rabid animals.

The theories as to the cause include:

1. Anaphylaxis, due to the repeated injections of foreign protein as contained in the rabbit cord employed, is thought to be the cause by Harvey and McKendrick.[2] Against this theory is the fact that paralyses have not been produced in animals by the injection of large amounts of normal nerve tissue and also, even should nerve

tissue produce anaphylactic symptoms, paralytic symptoms are not anaphylactic phenomena, say Stuart and Krikorian.[3]

2. The specific action of a "rabies toxin" which is in combination with the fixed virus used in treatment is the theory of Remlinger[4] and Babes.[5] This theory has not been confirmed.

3. Street virus infection, received from the biting animal and so modified by treatment that the disease runs an atypical course, is held by Koch.[6] Against this theory is the fact that in a number of cases the biting animal was not mad; in others the patients were not bitten, but had taken the antirabic shots merely as a precaution. The incubation period is usually too short for street virus infection.

4. Fixed virus infection due to the treatment is responsible, says Kozewalow[7] and Fielder.[8] The latter adds that a toxin might be an additional factor, but there are more arguments against than for this theory.

5. According to Stuart and Krikorian[3] the cause is to be found in some constituent of the protective inoculations themselves unavoidably introduced. This paralysis producing substance present in both normal and rabid nerve tissue can definitely be made innocuous to rabbits and rats by appropriate treatment with 1 per cent phenol. This fact has brought about a modification of the Pasteur treatment with a lessening of paralytic accidents. Finally, the vital importance of an individual idiosyncrasy must be recognized. Such susceptibility governs the actual occurrence of accident; otherwise, the cases would be enormously more frequent than they are.

TYPES OF ACCIDENTS

The clinical form of paralytic accidents encountered following antirabic treatment presents great diversity. There is no uniform classification but in general four types are recognized: (1) The ascending paralysis of Landry, (30 to 40 per cent); (2) the dorsolumbar myelitis (5 per cent); (3) the neuritic or isolated peripheral nerve paralyses (20 per cent); (4) the mixed myelitic and neuritic forms.

SYMPTOMS AND COURSE

Important differences are found in the initial period and in the period of invasion in each form. The development of the paralysis has no bearing on the length of time since the patient was bitten. In 25 per cent of the patients, according to Tumskaya,[9] the lesion develops during the first ten days after treatment is started; in 62 per cent of the patients it appears during the third week and 13 per cent of the patients later. It appears most frequently 14 to 15 days after the first inoculation. The incubation period of antirabic paralysis is therefore shorter than that of rabies.

The onset of symptoms in the dorsolumbar myelitis and Landry types is usually acute, and in the neuritic chronic. The clinical features differ moderately from true rabies. There is usually no fear of water and no spasm of the glottis. According to Volters,[10] in the myelitic types the interval between the first general symptoms and the onset of the paralysis is usually acute, lasting often only 24 hours. In the polyneuritic types the onset is preceded by a much longer period, during which the patient has vague pains, malaise, some degree of paresthesia and a slight weakness in the legs, which becomes slowly more intense. Fever is usually absent in this type and if it does appear is slight, and does not last the entire course of the infection, whereas fever may be persistent and very high and associated with chills in the myelitic forms. Paralysis in the myelitic forms may be complete in a few hours and is never delayed longer than three to four days, whereas in the polyneuritic form the paralysis appears slowly and corresponds to the increase in weakness of the lower extremities. Where sensory disturbances accompany the paraplegia they are located in the medullary part in the myelitic form, while in the polyneuritic they are of the peripheral type. When paralysis of the cranial nerves appears at the same time with the paralysis of the limbs, it is a case of polyneuritis. The myelitic form will produce grave dystrophic phenomena, prostration and sphincter disturbances. A sure sign of polyneuritis is that the pains may

not be spontaneous but may be provoked. The patient may complain of only a slight degree of neuritis with little or no motor involvement. In general the symptoms are as follows: At the termination of the treatment, or frequently just before, there suddenly appears the prodromal symptoms of malaise, vague pains, and anorexia. These last 24 hours when further signs of the affection such as headaches, dizziness, nausea, vomiting, occasionally hives, fever, pain in the back and extremities appear. The condition progresses rapidly, the headaches and vomiting often becoming severe. As the cerebral symptoms increase the consciousness is affected and stupor may ensue. Individual cerebrospinal nerves may become involved. The pupils often fail to react to light. Bulbar symptoms frequently appear in the form of disturbances of swallowing, rapid pulse, or disturbed breathing. Parallel with these cerebral symptoms come the signs of a severe spinal cord affection. The patient complains of weakness of the extremities and the sphincters are involved. The patient is unable to void or less frequently there is an incontinence. Objectively there can be demonstrated a decrease in the muscular power, loss of muscle tonus, absence of tendon and superficial reflexes. Pathologic reflexes may be demonstrated. A distended bladder is often palpable.

Spinal puncture reveals an increased pressure, an increase in albumin, an increase in cell count usually from 50 to 200 or more with a predominance of mononuclears, and a sterile culture. The blood count usually shows only a polymorphonuclear leukocytosis. Urinary findings are often albuminuria and occasionally glycosuria, but more frequently are normal.

PATHOLOGY

When the meninges are involved, there is usually an edema and hyperemia present. The pia mater has a cloudy appearance and sometimes a serous or serofibrinous exudate will form. The entire picture resembles that of an acute infiltrative myelitis or that of a hemorrhagic myelitis. Those parts of the cord affected show softening. A distribution of lesions through both the white and gray matter often renders differentiation between the two nearly impossible, the whole cord surface presenting a hemogeneous grayish pink appearance. Often the large ganglion cells of the gray matter of the cord partly disappear. Trophic disturbance is the cause of the softening. Extended lesions of the gray matter as it occurs in poliomyelitis or in polio-encephalomyelitis with disseminated foci are similar to those encountered in the ascending Landry type.

The greatest alterations are usually noted in the dorsolumbar medulla from which they extend and appear somewhat modified in higher regions. The medulla appears swollen and softened and the line between the gray and white substance is indistinct and sometimes one may note rosy zones or hemorrhagic dots in several places. It often seems to be noted that the white substance is more involved than the gray.

Sometimes the alterations of the medulla are limited to hyperemia and edema. In other cases there may be also inflammatory infiltrations around the vessels and nerve cells accompanied by hemorrhage. In more severe cases there may be a destruction of the nerve substance, which may appear in the form of edematous swelling of the fibers of the white substance. Similar alterations may be encountered in the encephalon but usually the destruction will be less extensive. Negri bodies or Lentz bodies are never found present.

TREATMENT

There is no specific treatment known and therefore symptomatic treatment has to be employed. Decubitus ulcers and cystitis are the most dangerous factors. Special care should be observed in their prevention. If the patient has been bitten by a known rabid dog the inoculations should probably be continued, since in numerous reported cases they have been persisted in without apparent detriment. They may be discontinued if the biting animal was probably not rabid. It is advisable in these cases to consult the pathologist.

PROGNOSIS

In regard to prognosis, the patients may be divided roughly into three groups. The mild ones with transitory paralyses of face or limbs all recover. The acute paraplegias of the lower extremities with or without involvement of the sphincters have a mortality rate of about 5 per cent. Death, if it occurs, is likely to be due to cystitis or bedsores after a long illness. The severest cases of the ascending Landry paralysis type have a bad prognosis for from 40 per cent to 50 per cent do not recover. Death is due to respiratory or cardiac paralysis or later from inhalation pneumonia, cystitis or bedsores. The earlier the appearance of the paralytic accident the more severe the symptoms.

CASE HISTORY

R. C., a white male, aged 18, a university student, entered the clinic on December 2, 1939, because of a severe headache and fever which began November 13, 1939. He also complained of weakness in the lower limbs and was unable to walk. He was unable to void. Two weeks prior, a dog at the university had contracted rabies and the patient was one among fifty who took the antirabic inoculations. He did not think he had been bitten by the dog, but had abrasions on both bands and had played with the animal. He took the treatment at the insistence of his family.

His first inoculation was given November 20, 1939, and he received one inoculation a day for twelve days. He was unable to come to the office for his eleventh treatment because of severe vomiting and pain in his abdomen which he had attributed to the eating of some shrimp. He requested that the treatment be given at his home, which was done. The following day, he was no better. His symptoms had increased in severity and an inoculation was again given to him at home. He had been able to be up and there was no evidence of paralysis other than an inability to void.

This patient had a peculiar nervous temperament, having lost an eye in an accident several months prior and had a more or less despondent outlook on life. The next day, because of the onset of lower extremity weakness, his thirteenth inoculation was omitted and he entered the hospital.

The following day, he developed definite evidence of paralysis in both legs. The cremasteric and lower abdominal reflexes were absent. His coma gradually increased. An eye examination by Dr. Titche revealed a choking of the left disc of 2-D with the veins engorged. The right eye was artificial. A diagnosis of paralysis of Landry due to antirabic treatment was made. The paralysis of the bladder continued and catheterization had to be employed. He lapsed into unconsciousness off and on most of this day, then began to develop some difficulty in swallowing. A spinal tap revealed an increase in fluid pressure of fifteen millimeters of mercury. The cell count was 145 with a predominance of round cells. On December 4, he lapsed into a coma from which he could not be aroused. The paralysis gradually extended higher and the lungs rapidly became filled with fluid and he died on December 6.

An autopsy was performed with particular reference to the brain, which was removed. The vessels throughout were markedly injected. There was a thin cloudy exudate at the base. A section of the brain was sent for examination to Dr. W. H. Seemann of the Department of Health in New Orleans, and to Dr. Wm. R. Mathews of the Charity Hospital in Shreveport, Louisiana.

Microscopic examination of the brain revealed numerous hemorrhages. The vessels of the brain and meninges were distended with blood and there was an edema of the meninges. The white matter was not affected as much as the gray, the places were barely distinguishable from each other. There were various areas of round cell infiltration in the brain. No Negri bodies could be demonstrated. Except for the absence of Negri bodies, the section of the brain appeared as one might expect to find in rabies, and similar to Perdrau's description of the complete histology.

CONCLUSIONS

1. Paralytic accidents following antirabic treatment are rare (0.02 per cent, or one in approximately every 5,000 cases) and of those affected an average of 25 per cent end fatally.

2. Since the paralytic accidents occur during the course of, or at the end of the antirabic treatment, it is reasonable to assume they are due to the protective inoculations.

3. The etiology is not known, but actual occurrence is governed by an individual idiosyncrasy. Apparently there exists in the basic nerve substance of all antirabic vaccines some deleterious component, which, although adversely affected by several physical and chemical agents, is still capable in certain susceptible individuals of producing the various forms of antirabic paralytic accidents.

4. Antirabic treatment is not entirely devoid of risk, though the possibility of the occurrence of paralysis is so slight that it should not deter those who need antirabic

treatment. A person bitten by a rabid animal is much more likely to develop rabies, which is certainly fatal, than paralysis, which usually ends in recovery.

5. To those who insist on antirabic treatment, in the absence of clinical or laboratory evidence that the biting animal was rabid, the slight risk should be explained.

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ESTROGENIC HORMONE THERAPY IN THE TREATMENT OF PRESENILE AND MANIC DEPRESSIVE PSYCHOSIS*

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Since time immemorial women have looked forward to that inevitable, many times tragic, climax in their reproductive period known as the change of life, or menopausal syndrome. Irrespective of the many factors stated as contributing or predisposing causes, the menopausal syndrome complex known as involutional melancholia may appear out of a clear sky in its most tragic form. There is the picture of absolute despair and loss of hope, sometimes to the degree that suicide is the only escape. In answer to their pathetic appeals, there has been very little to offer in the way of therapy to relieve their distress. My discussion is not based upon an acute enthusiasm; I do feel that after many years of patient endurance, by both the patient and the physician, there is at last a definite approach in the way of a rational therapy in the treatment of these unfortunate individuals.

Observations of Dreyfus clearly indicate the relationship between involutional melancholia and manic depressive psychosis is very close. The facts revealed by the investigation are: The majority of cases which had not terminated in death resulted in complete recovery. In a small percentage of cases, deterioration ultimately occurred on a basis of cerebro-arteriosclerosis which some patients seem prone to develop.

Kraeplin, in a preface to the work of Dreyfus, accepts this theory, expressed in the following words: "The results show that for the main bulk of cases which we have designated as involutional melancholia that there is no longer any basis compelling their separation from manic depressive psychosis. It would seem that the autonomy of involutional melancholia as a separate clinical entity is destroyed."

ETIOLOGY OF MANIC DEPRESSIVE PSYCHOSIS

The causes of manic depressive psychosis are not fully known. The essential feature in the etiology is a constitutional predisposition which is believed to be inherited. The depression may exist with or without biologic disturbances, but the symptoms are usually accentuated with the approach of the menopausal syndrome.

It is an accepted fact that not all the anxious depressions occurring during the menopausal syndrome belong to the involutional group. Perhaps one-third of these present an admixture of schizophrenic, psychotic, and psychoneurotic symptoms. During the prodromal period the line of demarcation is so ill-defined that a differential diagnosis is extremely difficult.

Inasmuch as this paper is devoted principally to presenile depressions, I feel that involutional melancholia should be briefly

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discussed. We realize that as long as the normal activity of the ovaries and their relation to the reproductive system is maintained the menstrual cycle continues. With the gradual decline in ovarian function, the gonads atrophy and their internal secretory function is sacrificed; the pituitary then increases its secretion of follicle stimulating hormone, causing an endocrine imbalance which is apparently responsible for the menopausal symptom complex. The adrenals are over-stimulated by the adrenotropic factor and the thyroid by the thyrotropic factor. This lack of harmony causes the hormone imbalance with the resulting effect on the autonomic nervous system.

Hannon, in 1927, was the first to demonstrate that patients at the menopause are very sensitive to epinephrine and that flushes can be provoked by the injection of small doses subcutaneously. In fact, periodic increased production of epinephrine seems to explain many of the neurocirculatory symptoms of the syndrome. There is a difference of opinion among many competent observers as to the value of estrogenic hormone therapy. Sevringhaus, Papanicolou and Shorr-Hawkinson, Werner and Suckle feel that it is of value in the treatment of mild depressions occurring during the menopausal syndrome, Werner being the most enthusiastic of this group. There are others who question its value.

In establishing a diagnosis a very careful prepsychotic history should be obtained. The possibility of a late developing schizophrenia with a prodromal depression is to be considered; a study of the eye grounds to eliminate cerebro-arteriosclerotic psychosis; and, the possibility of psychoneurosis—any of these conditions may occur during this period and none respond to estrogenic hormone therapy, though all present a syndrome similar to that noted in involutional melancholia.

A group of 51 patients, presenting symptoms from simple depression to the agitated type when there was the picture of despair—patient wringing hands, giving vent to cries and lamentations, several having hallucinations, varieties of delusions, ideas of culpability, ruin, suicidal tendencies, were observed. These patients were given 10,000 units of theelin in oil weekly and progress notes made each week by the nurse who gave the treatment. She was not informed as to the diagnosis of any of the cases in this group. Each patient received from 60,000 to 175,000 units. After treatment in this group had been completed, it was rather interesting to note that those cases not benefited by the therapy were diagnosed as follows: Dementia precox, six; psychosis with cerebral arteriosclerosis, 12; psychoneurosis, two.

The remaining 31 cases were diagnosed as involutional melancholia and manic depressive psychosis. Results in these cases are as follows: Excellent improvement, 21; improvement, eight; no change in mental condition, two. Eleven patients have been discharged from the hospital and are making a satisfactory home adjustment. A stabilizing dose, following initial treatment appropriate to each individual case, is recommended.

The histories of two patients are presented for illustration.

CASE NO. 1

First Admission: This patient was a white female, aged 46, married, who was admitted to the hospital February 1, 1938, with the information that her early life history was within normal limits and she was above the average in intelligence.

Patient stated her married life was made up of periods during which she was happy and other times sad. In 1925, she had a nervous breakdown lasting six months. Her husband died in 1933; following his death, she developed nervous symptoms which grew progressively worse.

On admission she was in a pronounced state of depression, stating she had committed unpardonable sins and could not be forgiven. She had fixed ideas as to conception of Deity, and had not applied in the correct manner the principles of righteousness—for this, she condemned herself. She had many somatic complaints. No hallucinations or delusions were elicited, and her speech was coherent and relevant.

Diagnosis: Manic depressive insanity—depressed phase.

Treatment: Hydrotherapy, and other appropriate therapy instituted. Response to treatment was very slow. A prepsychotic level was not reached until November, 1938. Furloughed from hospital November 23, 1938. Total hospitalization lasted eight months and 22 days.

Second Admission: Readmitted February 10, 1939. On second admission symptoms were very different from those noted at first admission. Her expression was one of happiness and animation. The face was flushed. Lucidity perfect and orientation correct. She presented the flight of ideas in its most typical form. Her judgment was materially affected. There was marked euphoria. Reactions were very impulsive; decided motor acceleration.

Diagnosis: Manic depressive insanity—manic phase.

Treatment: Theelin in oil, 10,000 units per week, for eight weeks. There was marked improvement following 40,000 units. The patient rapidly cleared and at the end of the sixth week had reached a normal prepsychotic level. She was discharged from the hospital on September 8, 1939, and is now making a satisfactory home adjustment with appropriate stabilizing doses of theelin.

CASE NO. 2

A white female, aged 51, married, was admitted to the hospital March 5, 1939, with the information that her early life history was within normal limits and she was of average intelligence.

Patient gave a history that about three years ago she had a nervous spell and became very depressed. There were no hallucinations or delusional ideas at that time. The episode lasted four or five weeks, and the attack was terminated abruptly. There were no residuals and she maintained a normal prepsychotic level until February 1939. At this time she began to worry over minor business affairs, pyramided her troubles until she lost control of her emotions, became extremely depressed and began to hear voices. She was brought to the hospital in this condition.

On admission her speech was coherent, she was correctly oriented and memory and retention were good. She continued to be in a marked state of depression which lasted six weeks.

Diagnosis: Manic depressive insanity—depressed phase.

Treatment: Patient was immediately placed upon theelin in oil, 10,000 units weekly. In about eight weeks improvement was noted and rapidly continued. The depression had completely cleared, she realized the absurdity of her hallucinatory experiences and had insight into the episode which she had experienced.

On May 28, 1939, she was discharged from the hospital and had reached a normal prepsychotic level. The period of hospitalization was two months and 23 days. I have kept in touch with this patient, she has made an excellent home adjustment and has not required any therapy since being discharged.

SUMMARY AND CONCLUSION

1. A correct diagnosis as near as possible before administering any definite form of therapy.

2. It is principally indicated in all forms of manic depressive and presenile states where the exciting cause is of biologic origin.

3. Give in sufficiently large doses, but be guided in both early and stabilizing doses by the requirements of each individual case. If favorable results are not obtained by 175,000 units, discontinue its use. With large doses over long periods, theelin tends to produce sclerosis of the ovaries (Kunde-Leonard). Moore says that its excess results in injury to the gonads, because it diminishes the gonad-stimulating hormone of the anterior pituitary. It is therefore not a harmless therapeutic agent.

4. Patients who present the involutional syndrome and do not respond to treatment will most probably fall subsequently into another classification. The therapeutic test may be of value in borderline cases.

5. Observation here indicates that there is improvement in many patients to such extent that they are able to return home and maintain (with treatment) a normal domestic level. The period of hospitalization is materially reduced. Those requiring hospitalization are able to make a more satisfactory adjustment.

6. It is generally accepted that estrogenic hormone therapy benefits the nonpsychotic patient who has mild neurocirculatory symptoms resulting from biologic disturbances. Many of these persons are emotionally unstable and are potential candidates for manic depressive states. The history obtained from the majority of the manic depressive cases is that the episodes following each remission become more pronounced as the menopause is approached. The close relation existing in these states is definitely established to the degree that the autonomy of involutional melancholia as an entity is destroyed. Why then, could we with any degree of fairness to ourselves and our patients administer that which we consider a rational therapy to a patient pre-

senting the prodromal symptoms and ignore its use when the storm resulting from the preliminary preparation arrives.

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DISCUSSION

Dr. C. S. Miller (Jackson): In discussing this excellent paper of Dr. Robards, I shall attempt to emphasize only a few of the points he brought out regarding estrogenic therapy in involutional melancholia. At the time of the menopause there are many conditions that simulate involutional melancholia. There are a lot of depressions induced by presenile changes, arteriosclerosis, psychoneuroses and other conditions, which are not clearly diagnostic. Now the main feature in dealing with these patients is to make a diagnosis. Proper diagnosis has to be arrived at and all other diseases or conditions removed. If we are dealing strictly with involutional melancholia cases, we can expect results from estrogenic therapy. We find that a number of patients show no depressions or no symptoms until the involutional period occurs. However, if we question our patients very closely, we frequently find that they have experienced previously one, two, or more periods of depression. Probably, these were not sufficient to have this individual hospitalized, but at the same time, we should determine if they have previously had some trouble. In the patients who have had the depressions prior to the involutional period, spontaneous recovery is very probable. In persons developing depression during or after the involutional period, there are but a few spontaneous recoveries.

I want to bring out the point that before we used estrogenic therapy at the hospital we had about one-third of involutional cases to return home. Now, the figures are just reversed; we have about one-third remain in the hospital. As Dr. Robards showed in his figures, out of the 31 cases, we had 21 patients who made excellent adjustment; eight of them fair, and two none. These patients, of course, must continue small doses of hormone after they leave the hospital, because we feel that in going into or entering senility, that the disturbances in the hormone balance causes this trouble, and nature has to have a chance to stabilize these individuals in their new life. Therefore, we require all our patients going out to take small doses of theelin after they leave the hospital.

Dr. Robards has covered the subject so well that I do not see that I can add very much more to it, but I did want to make that part of the paper clear and try to emphasize the facts that he has brought out in his statistics.

Dr. J. T. Cappel (Alexandria): As a general practitioner whose patients are principally women, I greatly appreciate Dr. Robards' paper. It is certainly encouraging. He is in a position, in a large institution, to have the opportunity of observing his patients more closely than we can, and to see his treatments carried out. He is also in a position to make an early differential diagnosis of the different forms of insanity that simulate involutional melancholia. But we, as general practitioners, have the advantage of knowing the patients for many years and can detect slight changes in their mental status, and should start treatment a long time before it is necessary for them to have institutional treatment. I do believe we have saved many of our women from going to institutions for treatment by giving standard preparations of estrogenic hormone in large enough doses to stabilize them, so that they can carry on their domestic duties, and we have done no harm in giving these treatments. I do not believe that estrogenic hormone in relatively large doses over a short period would do any serious harm. In fact, it would help make a differential diagnosis. If they do not clear up, we should call in a specialist to find out the cause of the trouble.

Dr. C. S. Holbrook (New Orleans): I want first to congratulate the staff of the East Louisiana State Hospital on the splendid work it is doing. The psychiatrists there have been in recent years employing the various types of therapy brought out that might help the patients who are mentally ill. I think we may no longer have to think of the hospital as an asylum where patients are just sent and where they receive no particular treatment but only custodial care. The institution is doing very splendid work, as exemplified by Dr. Robards' paper.

I am quite in accord with what Dr. Robards has said as to the use of estrogenic hormone therapy in some of these patients. I think it should be somewhat on a trial basis; if it does not help the patient, it should not be continued over a great length of time. Many women patients are anxious to place the responsibility of their inability to get along, the responsibility of their mental disturbances, on the change of life. After they get to 29 or 30 years of age they are willing to blame everything on that. I think a lot of theelin is misused, and valuable time is wasted giving theelin, when proper investigation might show the real cause of the trouble. The menopause is used as an explanation for various troubles entirely too often. I see people who have been told that they have been going through the menopause for ten, fifteen,

or twenty years, and are still menstruating regularly, having no particular trouble that way. Somebody has suggested that they should have theelin and they have taken it over a period of time. I think we as medical men should not lend the weight of our judgment and our opinion to that thought. I think we are too ready to accept the menopause as an explanation for a woman's difficulties provided she is over thirty years of age. If she continues to live long enough, she will probably have some evidence of the menopause in ten, fifteen, or twenty years. So, we should be on our guard not to let this type of therapy get too far away from us. If we give large doses for six or eight weeks and the patient is not benefited, then probably we are not using the right therapy.

In involutional melancholia I am sure a number of patients benefit by it. I think one part of the benefit is due to the hormone itself and part of the benefit is due to the fact that the psychiatrist gives the patient something to hang on to. They are treated as sick people, given hypodermic injections, and in that way there is psychotherapy in addition to the actual benefit from the hormones.

Dr. Hugh Newbill (New Orleans): I endorse Dr. Holbrook's statement as to the necessity of adding psychotherapy to estrogenic therapy in the treatment of these patients, for it is difficult for me to conceive that a reduction in or complete absence of estrogen can be the sole cause of mental disease. Psychoses develop in only a very few of the many women in whom an artificial menopause has produced a much more abrupt and more severe loss of this substance than the natural menopause causes. Some additional factor must be responsible for the appearance of mental disease. The loss of estrogen, in my opinion, cannot be more than a precipitating factor. Its action would be similar to that of any other organic lesion, such as a gastric ulcer or a broken leg. Estrogenic therapy alone, therefore, does not offer much hope for the cure of mental disease.

Furthermore, it has been shown that the estrogens are not entirely ovary-specific in their effects. Injections of certain vitamins can reproduce many of the same phenomena.

It is very difficult properly to evaluate a statistical study concerned with psychogenic diseases and their therapy. Patients differ greatly and it is no simple matter, as a result, to obtain a proper group of controls. It would be interesting to study a series of patients treated alternately by estrogenic and vitamin B_1 therapy.

Dr. H. Randolph Unsworth (New Orleans): It is difficult to make a few comments as Dr. Robards asked me to do, as the subject has been so thoroughly gone into.

It has appeared to me clinically that it is difficult to know which melancholic or involutional type of psychosis is benefited by estrogen therapy. It has impressed me, however, that these individuals who appear to be endogenous in their make-up, and therefore, involutional changes are more advanced, respond better. There is some question in a lot of people's minds, that with certain types of the involutional psychotic, estrogenic therapy is definitely detrimental. I, personally, am not in a position to know that differentiation. I do not know that estrogen therapy by itself is any cure for the psychotic and the involutional period.

As Dr. Robards brought out, there are many factors that have to be considered diagnostically in the diagnosis of pure, unadulterated involutional psychosis. First, is the family history. It has been my experience that these people who develop a menopausal syndrome that have a family history of such disturbances offer a worse prognosis than those who do not. Those people who have been perfectly normal all through their lives and reach the involutional period have a better prognosis than those who have had more or less minor disturbances.

Another differential point is the ophthalmoscope. It has appeared to me that the arteriosclerotic group is very difficult from the standpoint of prognosis; they seem to have a bad prognosis, and it seems impossible to say whether the psychosis in the involutional period is purely endogenous, or purely involutional, or whether there are any presenile or arteriosclerotic factors.

Any active therapy is the best type of psychotherapy I know of. I think it is a mistake therapeutically to attempt to cure people by talk and talk alone, to try to correct their errors and try to render straight their lives. It has been my practice, no matter if I think I have a specific medication or not, to give my patients active therapeutic doses. It has been my observation that involutional patients who have gotten well without therapy at all except psychotherapy—so that the subject is wide open and I think it is very difficult to sift down to specific diagnoses or the specific type of therapy.

Dr. E. M. Robards (In closing): I have endeavored to impress the fact that actuated me in presenting this paper; the wish to find a form of therapy that would afford relief in one of the most tragic conditions occurring during the menopausal syndrome. So many women, particularly those with a cyclothymic personality, are potential candidates for this condition.

I selected the number of cases referred to, all presenting a similar syndrome. Treatment was given by a nurse who was not familiar with the diagnosis of any of these cases. She was required to make progress notes for each case. The statistics submitted were obtained from these notes and my personal observations.

The purpose of my paper was not controversial, but to advance that which I consider a rational therapy in the management of these cases.

THE USE OF SULFONAMIDE DRUGS IN CERTAIN BACTERIAL INFECTIONS*

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Sulfanilamide and certain of its derivatives have proved to be very valuable in the treatment of a wide variety of infectious diseases, but their good results are not a justification for their promiscuous use. Clinical and laboratory experience has shown that the bacteriostatic effect of each of these drugs varies according to the micro-organism against which it is used, and that a drug which is very effective against one strain may be relatively ineffective against another strain of the same organism. The value of sulfanilamide and its derivatives has been clearly established in infections due to the beta hemolytic streptococcus of the A group of Lancefield, for instance, but there is little convincing evidence of their efficacy in the treatment of infections due to streptococci of other groups.

It may be impossible or impractical to make elaborate bacteriologic studies in milder infections, but as a general rule it is important that in the selection of cases for chemotherapy and in the choice of the drug to be administered the decision be made on a bacteriologic rather than a clinical basis. Failure to observe this precaution undoubtedly helps to explain apparently conflicting reports on the use of sulfanilamide and its derivatives in infections classified as to organ or system involved rather than as to careful bacteriologic investigation.

It is equally important, in the use of sulfanilamide and its derivatives, to bear in mind that there is no known method of predicting the toxic reactions which may follow the use of these drugs in certain individuals. The possibilities of danger in this regard furnish another potent argument against their promiscuous use.

PUERPERAL INFECTION

Colebrook and Kenny,[1, 2] in 1936, made two reports on the use of prontosil (neoprontosil) and sulfanilamide in puerperal infections caused by B. hemolytic streptococcus. One or the other of the drugs was given orally and was supplemented, when necessary, by intramuscular injections of prontosil (neoprontosil) solution. In the majority of cases there was a prompt drop of temperature and a remission of clinical symptoms, and the mortality rate was reduced from more than 22 per cent to less than 5 per cent. The authors explained the action of prontosil (neoprontosil) as due to its sulfanilamide content, but other observers do not believe the small amount of sulfanilamide present in prontosil sufficient to explain the beneficial effects and consider that this compound exerts some other chemotherapeutic action in the body.

ERYSIPELAS

Both sulfanilamide and prontosil (neoprontosil) have proved of value in the treatment of erysipelas. Snodgrass and Anderson,[3] for instance, reported a mortality of 2.5 per cent in 160 patients treated with these agents as compared with a mortality of 6.6 per cent in a control group of 162 patients treated by other methods. They also observed that the duration of fever and toxemia was shortened, that the size of the lesion was decreased and its spread arrested, and that the number of complications was smaller. Studies of other large groups of cases have shown equally good results, and there is no longer any doubt of the superiority of chemotherapy over serotherapy and ultraviolet ray and roentgen ray therapy, which were formerly the methods of choice in the treatment of erysipelas. Oral therapy is usually sufficient, but parenteral methods of administration can be employed when absorption is questionable.

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STREPTOCOCCIC MENINGITIS

The mortality rate of streptococcic meningitis has been strikingly reduced by the use of sulfanilamide and neoprontosil. Schwentker and his associates[4] reported three recoveries in four cases due to the hemolytic streptococcus; Neal and Appelbaum[5, 6] reported three recoveries in 17 cases, and Toomey and Kimball[7] reported 10 recoveries in 12 cases.

In these cases the oral administration of sulfanilamide or neoprontosil was supplemented by the subcutaneous injection of sulfanilamide (0.8 to 1.0 per cent in normal saline solution) when oral therapy or administration by stomach tube seemed inadequate. Schwentker and his associates[4] also advised intrathecal injection of sulfanilamide by gravity (15-25 c.c. of 0.8 per cent in normal saline solution). Toomey and Kimball[7] consider sulfanilamide the drug of choice and emphasize the necessity of adequate surgical drainage of any localized areas of infection in addition to chemotherapy.

SCARLET FEVER

The only beneficial effects observed in the treatment of scarlet fever by chemotherapy, according to several reports in the literature, is a reduction in the incidence of complications. Various writers have pointed out that to accomplish even this object either neoprontosil or sulfanilamide must be administered in full dosage throughout the entire course of the illness. They also advise the use of large amounts of specific serum intravenously in the early stages of severe types of scarlet fever.

STREPTOCOCCIC BACTERIEMIA

Excellent results have been reported from specific therapy in infections of Beta hemolytic streptococcic origin in which blood stream infection has occurred. Kolmer[8] treated 18 such patients with a mortality of 22 per cent, and the method has also been successful in cases of bacteriemia originating from cellulitis, burns and infected wounds. Kolmer emphasized the importance of supplementing chemotherapy with adequate surgical drainage of the causative lesion, and Lockwood and Lynch[9] gave the same advice, pointing out the relative ineffectiveness of sulfanilamide in the presence of purulent exudate and detritus in infected wounds. The latter authors, by the addition of small amounts of products of protein digestion to cultures of pneumococci, streptococci, staphylococci and colon bacilli, were able to demonstrate inhibition of the action of sulfanilamide against these organisms.

STREPTOCOCCIC PNEUMONIA

The largest series of cases on record in which streptococcic pneumonia was successfully treated by sulfanilamide was reported by Hageman and Blake[10] and consists of only seven cases.

PNEUMOCOCCIC PNEUMONIA

Sulfapyridine has been established as the drug of choice in the treatment of infections caused by the pneumococcus, and its extensive use in pneumococcic pneumonia has reduced the mortality of that disease to well below 10 per cent. The use of type specific antipneumococcic rabbit serum has produced almost as good results, but technical and other difficulties have made the widespread use of this method somewhat less practical.

Extensive clinical trials have established the following plan of therapy as satisfactory in pneumococcic pneumonia.[11]

1. Sulfapyridine should be administered orally in all cases. The sodium salt of sulfapyridine should be administered parenterally in cases of severe infection, in cases in which high blood levels of sulfapyridine are desirable and in cases in which absorption from the gastrointestinal tract is questionable.

2. Adequate doses of type specific antipneumococcic serum should also be injected intravenously over a period of one or two hours in the following instances: (a) All cases associated with bacteriemia or with other complications; (b) all cases of type III infection; (c) all cases in which treatment is not instituted until the third day of the illness or later; (d) all cases in which more than one lobe of the lung is involved; (e) all cases seen during the last week of pregnancy or the first week of the puer-

perium; (f) all cases in which the patients are debilitated as the result of a preceding operation or illness; (g) all cases in patients over 45 years of age.

Flippin and his associates[12] have recently compared the results in 100 patients with pneumococcic pneumonia treated with sulfathiazole and 100 control patients treated with sulfapyridine. Their observations, which we have corroborated in 15 cases, were that both drugs are equally effective, but that sulfapyridine seems to bring the temperature down more rapidly while the severity and frequency of nausea and vomiting seem to be considerably less when sulfathiazole is used.

PNEUMOCOCCIC MENINGITIS

The mortality of pneumococcic meningitis has been markedly reduced by the use of sulfapyridine. Kolmer[8] reported one recovery in three patients and Toomey and Roach[13] six recoveries in 12 patients. Hodes, Gamble and Burnett[14] reported eight recoveries in 17 patients, in contrast to a mortality of 100 per cent in 29 patients treated by other methods.

Sulfapyridine is the drug of choice in pneumococcic meningitis. It should be given in sufficient dosage to maintain levels in the spinal fluid of 10-15 mg. per 100 c.c. In order to accomplish this result oral therapy must usually be supplemented by the intravenous administration of the sodium salt at four to six hour intervals. In some cases it may be of value to administer 0.3 to 0.7 per cent solution of the sodium salt as hypodermoclysis. Toomey and Roach[13] also emphasized the importance of the additional intravenous use of type specific antipneumococcic serum in massive doses.

MENINGOCOCCIC MENINGITIS

The mortality of meningococcic meningitis has been markedly reduced since the introduction of sulfanilamide and prontosil. High levels of the drug must be maintained in the blood and spinal fluid, to accomplish which oral therapy must be supplemented by parenteral therapy. Sulfanilamide (8 per cent in normal saline solution) may also be administered as hypodermoclysis or by the intrathecal route. Anti-meningococcic antiserum should be given in full dosage.

Kolmer[8] considers sulfanilamide superior to neoprontosil because of its more rapid penetration, and believes that sulfapyridine may be even more effective.

STAPHYLOCOCCIC INFECTIONS

Experimental studies on the value of the sulfonamide drugs show that mice are protected against massive infections with *Staph. aureus* by sulfanilamide, neoprontosil, sulfathiazole, and sulfamethylthiazole in order of increasing effectiveness. In human subjects, however, results with the sulfonamide drugs have been less striking in staphylococcic than in other bacterial infections, perhaps because of the massive tissue injury usually associated with such infections (Lockwood and Lynch[9]). These authors, as has previously been mentioned, have demonstrated that minute amounts of products of protein digestion inhibit the action of sulfanilamide on bacteria and have stressed the importance of prompt and adequate drainage of purulent foci if good results are to be expected.

Recent literature indicates that thiazole derivatives are the drugs of choice in the treatment of staphylococcic infections and that oral therapy may be supplemented by the intravenous injection of sodium sulfathiazole to insure high blood levels.

UNDULANT FEVER

Long and Bliss[15] have questioned the good results reported in the treatment of undulant fever with sulfanilamide, pointing out that unless the follow-up covers a long period of time one cannot be certain that cure has occurred because of the tendency to recurrence in this disease. They observed five patients with undulant fever, in each of whom the immediate response was good but four of whom had recurrences after treatment was discontinued. In spite of these equivocal results, they advocate the oral use of chemotherapy to shorten the duration of the acute stage of the disease.

CLOSTRIDIUM WELCHII INFECTIONS

Bohlman,[16] who reported very good results in three patients with gas bacillus in-

fection treated by sulfanilamide, believes that the drug exerts its beneficial action by checking the symbiotic growth of streptococci. He emphasizes the importance of the additional use of surgical measures and specific antitoxin. Long and Bliss[15] advocate the use of sulfanilamide as a prophylactic measure in the treatment of crushing injuries.

TYPHOID FEVER

Several reports are available concerning the use of sulfonamide drugs in small numbers of patients with typhoid fever. We have personally had good results in a small number treated with sulfathiazole and sulfamethylthiazole, but have not yet observed a sufficient number of cases to justify definite conclusions.[17]

TULAREMIA

The value of the sulfonamide drugs in tularemia has not yet been established in large groups of patients. We have not personally observed any definite response to either sulfanilamide or sulfapyridine, but have seen striking improvement following sulfathiazole and sulfamethylthiazole in several patients who were seriously ill with pulmonic involvement.[18]

ULCERATIVE COLITIS

Brown and his associates,[19] and Collins[20, 21] have treated chronic ulcerative colitis with sulfanilamide and neoprontosil with good results. Collins advocates the maintenance of high blood levels by oral therapy, as well as the administration of neoprontosil solution by rectal instillation.

VIRUS DISEASES

Although sulfanilamide and sulfapyridine have proved of value in the treatment of lymphogranuloma venereum, the only beneficial effect observed in other virus diseases, according to Kolmer,[8] can probably be attributed to their effect in preventing or limiting the growth of pyogenic bacteria.

MISCELLANEOUS INFECTIONS

It is difficult to determine the value of the sulfonamide drugs in the treatment of infections of the upper respiratory passages, paranasal sinuses and mastoids because the proper bacteriologic studies are lacking in most of the cases on record. Their use in milder infections of this sort is questionable because of the toxic reactions which may follow, but their use in severe infections would seem entirely justified.

TOXIC REACTIONS FOLLOWING CHEMOTHERAPY

As a matter of convenience the signs, incidence, significance and treatment of the toxic manifestations of the sulfonamide drugs are presented in the form of a table, which has been modified from the similar

COMMON TOXIC MANIFESTATIONS OF THE SULFONAMIDE DRUGS

	Signs	Incidence	Treatment	Significance
Skin	Cyanosis	50% plus	None	Not serious
	Rash	1-6%	Stop drug; avoid exposure to ultraviolet light	Usually subsides
Blood	Neutropenia			
	mild	40% plus	Stop drug if progressive	Usually rapid return to normal
	severe	Uncommon	Stop drug; pentnucleotide; transfusion	Sometimes fatal
	Hemolytic anemia			
	mild	Common	Stop drug if progressive	Usually rapid return to normal
	severe	1-10%	Stop drug; transfusion	Usually subsides; may be fatal
Kidney	Hematuria	5% plus	Stop drug if marked	Usually responds Ureteral obstruction due to uroliths may develop
Alimentary tract*	Anorexia, nausea and vomiting	50% plus	May require parenteral therapy if severe	Usually subsides and continued treatment possible
Nervous system	Dizziness	Common	May require bed rest	Not serious
	Depression, disorientation, psychosis	Not common	Stop drug; force fluids	Serious
	Neuritis	Not common	Stop drug; vitamin therapy	Usually subsides after long period of time
	Fever	3-9%	Stop drug	Difficult to be certain if of drug origin

*Toxic hepatitis has been observed.

tables presented by Keefer,[22] Long and his associates,[23] and Kolmer.[8]

SUMMARY

The therapeutic effect of the sulfonamide drugs in streptococcic, pneumococcic, staphylococcic and miscellaneous infections has been briefly reviewed. The results in many such infections are extremely good. Such therapy is both safer and more effective if it is based upon careful laboratory studies.

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THE TREATMENT OF LYMPHOGRANULOMA INGUINALE WITH NEOPRONTOSIL*

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The lack of unanimity in the treatment of lymphogranuloma inguinale, especially in the ambulatory patients, has prompted this study. We have attempted to give maximum therapeutic dosage to these patients and at the same time keep them at their regular employment.

It has been our plan in both the acute and chronic cases to give a dosage of 1/3 grain of neoprontosil per pound of body weight daily for one week, then 1/4 grain per pound daily for at least four weeks. Patients returned at weekly intervals for new supplies of the drug, gland measurements, rectal examinations and in some cases photographic studies (see cases #3, #4). The only contraindication to the use of neoprontosil has been a history of sensitivity to drugs of the sulfanilamide group. Safeguards included frequent blood counts, urine examinations, together with instructions to the patients to keep a daily temperature chart and to avoid alcohol, other drugs, and prolonged exposure to sunlight. The importance of regular diet and sufficient sleep was stressed. Patients were instructed to stop the drug in the event of headache, nausea, vomiting, diarrhea, and skin rashes.

*Neoprontosil furnished by Medical Research Department, Winthrop Chemical Company.

†From the Department of Dermatology and Syphilology, Louisiana State Charity Hospital, New Orleans, Louisiana.

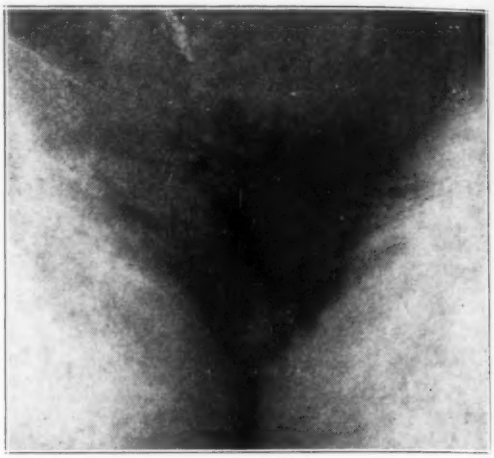

Fig. 1b. Case No. 3 showing patient after treatment over a period of 30 days.

Fig. 1a. Case No. 3 showing patient before treatment.

Fig. 2a. Case No. 4 showing patient before treatment.

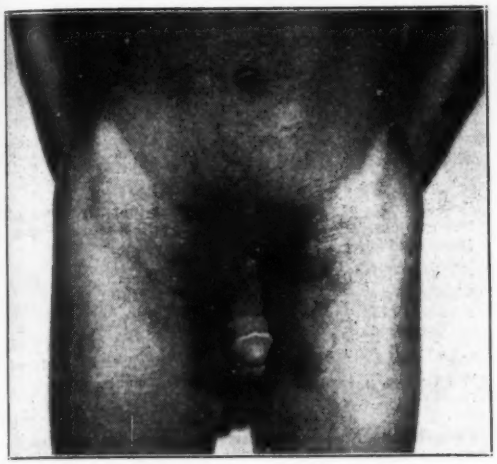

Fig. 2b. Case No. 4 showing patient after treatment over a period of 40 days.

In the acute cases there was a prompt alleviation of local signs and symptoms. We have shown in Chart 1 the results of our series of 19 cases. Fourteen were completely healed, three were responding to treatment but did not return for check up and have been lost sight of. Two have been improving under therapy, but it is too early to report on the results as yet. It required an average of 98.7 grams and 34.9 days to produce a clinical cure. In two of our patients relapses occurred three weeks after neoprontosil was discontinued. In both of these, resumption of drug produced prompt healing. We attempted to evaluate our results by a comparison with results of acute cases treated in the same clinic by other methods. Under treatment with tartar emetic 5 c.c. of 1 per cent solution intravenously in conjunction with bismuth salicylate 1 c.c. in oil intramuscularly at weekly intervals, sodium iodide and sodium salicylate gram 1 intravenously, at weekly intervals, the average duration of 35 cases was 497.5 days. In 66 cases collected from the American literature treated with sulfanilamide compounds a clinical cure was produced in 56 patients, a fair result in seven, there was no improvement in one, two patients were lost sight of. Their time under treatment varied from 30 to 60 days and the total amount of drug from 75 to 150 grams. In 34 cases collected from the foreign literature treated with related compounds there were 28 with clinical cures, five with improvement, and one with no improvement. Both total amount of drugs and duration of treatment were much less than in our series.

In our clinic, chronic cases were treated for an average of 46.2 days with an average total of 93.7 grams. In six of our nine patients there was an improvement in the general health, gain in weight and a return to more normal bowel movements. There was no change in pathology present in the rectum. In two of the remaining three patients the drug had to be discontinued because of diarrhea; in the other, continued treatment failed to produce improvement. Chronic cases in our clinic treated with other methods showed no improvement. In 24 cases collected from the American literature treated with sulfanilamide compounds in amounts comparable to those we used, 16 showed marked improvement, four slight improvement, two no improvement, and two were lost sight of. In 16 cases collected from the foreign literature treated with sulfanilamide compounds the results were very good in nine patients and poor in seven patients. In many of the improved patients reported in both American and foreign literature, softening of the scar tissue in the rectum and a lessening of the perirectal infiltration was noted; in none of our patients did we note a corresponding change in pathology.

It is of interest to note that sulfanilamide compounds have produced in the acute stage of this virus disease a clinical cure. Other virus diseases in which the drug has been tried have not responded. Also of interest is its effectiveness even in the presence of suppuration. In other diseases suppuration tends to impede the action of the drug. As a matter of interest the Frei changed from positive to negative in two acute cases after treatment.

CHART 1

PERTINENT CLINICAL DATA IN 19 ACUTE CASES

Administrative data	Duration before Rx (days)	Days under Rx	No. clinic visits	Clinical findings before treatment	Laboratory data	Total amount drugs	Remarks
1. # 58920 CF—24 Wt. 162	31	42	8	Bilateral adenopathy with draining sinuses	Frei—pos. Wass.—neg.	150 grams	None
2. # 69125 CM—20 Wt. 153	52	42	7	Right adenopathy 3″ x 2″	Frei—pos. Ducrey—pos. Dark field—neg. Donovan—neg.	112 grams	Ducrey negative end of treatment. Frei—negative
3. # 0058 CF—23 Wt. 100	21	42	10	Right adenopathy 2½″	Wass.—pos. Frei—pos.	56 grams	None
4. # 91566 CM—21 Wt. 130	42	56	12	Right adenopathy 3″, left 2½″	Frei—pos. Wass.—pos. Ducrey—neg.	135 grams	Frei negative end of treatment
5. # 56808 CF—28 Wt. 140	28	49	11	Right gland 1″, left ¼″	Frei—pos. Wass.—neg.	119 grams	Frei remained positive
6. # 217689 CM—34 Wt. 145	90	70	11	Left gland 1″	Frei—pos. Ducrey—pos. Wass.—pos. Dark field—neg. Donovan—neg.	168 grams	None
7. # 10744 CM—20 Wt. 150	14	42	11	Left gland 3″, right gland 1″	Frei—pos. Wass.—neg.	105 grams	Frei weakly positive completion of treatment
8. #95821 CM—18 Wt. 135	60	27	6	Right gland 2″	Frei—pos. Wass.—neg.	86 grams	None
9. # 73223 CF—25 Wt. 110	48	28	6	Left gland 2″	Frei—pos. Wass.—pos.	60 grams	None
10. # 117488 CF—19 Wt. 110	14	49	8	Right gland 3″ draining sinus	Frei—pos.	75 grams	Small dosage because of vomiting of pregnancy
11. # 196110 CM—21 Wt. 130	270	120	14	Right gland 2″ x 1″ with draining sinus	Frei—pos. Wass.—pos.	263 grams	Relapse 3 weeks after drug was discontinued
12. # 119719 CF—19 Wt. 120	7	19	4	Left gland 3″ x 2″	Frei—pos. Wass.—pos.	47 grams	None
13. # 224480 CM—23 Wt. 157	180	14	3	Right gland 3″ x 1″, left 6 discrete glands	Frei—pos. Dark field—pos. Ducrey—pos.	44 grams	None
14. # 218390 CM—39 Wt. 155	11	14	2	Left gland 1½″, right gland 1″	Frei—pos. Wass.—neg.	42 grams	Did not return for check-up
15. # 10381 CM—35 Wt. 150	28	21	3	Right gland 3″ x 1″ with sinus	Frei—pos. Wass.—pos.	63 grams	Delinquent after three weeks
16. # 187456 CF—15 Wt. 130	21	28	5	Left gland 3″ x 2″	Frei—pos. Wass.—pos.	70 grams	Still under treatment
17. # 137233 CM—27 Wt. 161	18	15	3	Right gland 3″ x 2½″, left 2″ x 2″	Frei—pos. Ducrey—pos. Wass.—neg.	42.6 grams	Still under treatment
18. # 211381 CM—29 Wt. 150	21	21	6	Left gland 2″ x 4″ with draining sinus	Frei—pos. Wass.—pos.	60 grams	Incision and drainage nine days before treatment was started
19. # 140943 CF—28 Wt. 120	14	28	4	Right gland 1″	Frei—pos. Wass.—neg.	60 grams	Did not return for treatment

CHART 2

PERTINENT CLINICAL DATA IN 9 CHRONIC CASES

Administrative data	Duration before Rx (years)	Duration Rx (days)	Clinic visits	Pathology	Subjective signs	Laboratory	Total amount	Remarks
1. # 124540 CF—38 Wt. 119	5½	77	11	Rectal stricture	Tenesmus, bloody stool, muco-purulent discharge, diarrhea.	Frei—pos. Blood Wass. —neg. Spinal fluid —neg.	158 grams	Dilated 32, Bi. 84, TE 70 with no improvement before starting neoprontosil. Now feels better, gaining weight, appetite better.
2. # 2791 CF—30 Wt. 105	9	7	3	Rectal stricture, multiple rectal sinuses	Constipation, muco-purulent discharge	Frei—pos. Blood Wass. —pos.	28 grams	Colostomy 1936, Bi. 27, neo 7 before neoprontosil started. General improvement with neoprontosil.
3. # 136423 CF—24 Wt. 98	3	56	8	Rectal stricture	Constipation, blood mucous stool, tenesmus	Frei—pos. Wass.—neg.	93 grams	Dilated 2, TE 3, with no improvement. Rectal complaint improved, bowel movements normal with neoprontosil.
4. # 120070 CF—24 Wt. 110	8	21	10	Rectal stricture	Diarrhea, constipation, blood & mucous stool, tenesmus	Blood Wass. —pos. Frei—pos.	56 grams	Bi. 25, neo 10 with no improvement. Drug discontinued due to diarrhea.
5. # 23315 CF—65 Wt. 135	5	109	11	Rectal stricture	Constipation, blood, mucous & pus in stool, tenesmus	Frei—pos. Wass.—neg.	179 grams	Dilated 24, TE 44 with no improvement. Rectal complaint better, appetite better and general improvement.
6. # 73524 CF—65 Wt. 139	4	104	16	Rectal stricture, rt. ing. gland 2" x 3" with draining sinus	Constipation, inguinal mass	Frei—pos. Wass.—neg.	231 grams	Bi. 22, TE 8, dilated 2 with no improvement. Rectal complaint improved. Adenopathy healed with treatment, recurred three weeks after stopping drug. Healed on resuming treatment.
7. #51868 CF—22 Wt. 107	4	14	2	Rectal stricture	Constipation, tenesmus, anorexia, loss of weight	Frei—pos. Wass—pos.	30 grams	Bi. 16, neo 11. Feels better in general. Bowels about the same. Still under treatment.
8. # 22423 CF—20 Wt. 115	1	14	2	Edema of the labia, rectal stricture	Constipated, muco-purulent discharge	Frei—pos. Wass.—neg.	32 grams	TE 9 and sulfanilamide. Drug caused illness and was discontinued. Patient receiving neoprontosil and toleration good.
9. # 88876 CF—20 Wt. 136	¾	14	2	Stricture with inguinal adenopathy	Constipated, bloody stool	Frei—pos. Wass.—neg.	37 grams	Bi. 10, TE 9 before using neoprontosil. Still under treatment, condition about the same.

CONCLUSIONS

1. Neoprontosil is a safe drug for ambulatory treatment in acute lymphogranuloma inguinale and produces clinical cure in a majority of cases.

2. Chronic cases are symptomatically benefited by its use, but no change in rectal pathology has been noted in our series.

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STUDIES ON THE BLEEDING TENDENCY AND VITAMIN K THERAPY IN NEWBORN CHILDREN*

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AND
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NEW ORLEANS

Although Whipple,[1] as early as 1912, had suggested that the cause of the hemorrhagic diathesis in obstructive jaundice might be a deficiency of prothrombin, the suggestion could not be turned to practical account until some method had been devised for determining the prothrombin content of the blood. Such a test was published by Quick and his associates[2] in 1935, at approximately the same time that the work begun by Dam and his associates[3,4] in 1929 on a certain hemorrhagic disease in chicks had been proved to be due to a deficiency of a vitamin found in cereals, green vegetables, alfalfa, hay, hog liver fat and similar sources. Other experimental observations,[5] which also culminated at approximately the same psychologic time, completed the concept of the hemorrhagic diathesis in jaundice which is held at the present time and which may be stated as follows: A deficiency of prothrombin in the blood is the immediate source of the bleeding. A deficiency of the fat-soluble vitamin K causes the diminution in the prothrombin. A deficiency of bile salts in the intestinal tract causes inadequate absorption of, and thus the deficiency in, vitamin K. Hepatic damage is probably responsible for and is positively associated with the diminished prothrombin content of the blood.

With the establishment of this hypothesis, even though the various premises which make it up are still not entirely understood, the control of the hemorrhagic diathesis became an entirely practical matter. It was natural that an endeavor should be made to apply these discoveries to other diseases in which bleeding is a factor. This has been done, either with no success at all or with very indifferent success, except in the bleeding tendency of the newborn, the control of which seems to have become as practical as the control of the hemorrhagic diathesis of obstructive jaundice.

PREVIOUS STUDIES IN THE BLEEDING TENDENCY OF THE NEWBORN

In 1937 Brinkhous, Smith and Warner,[6] in a study of young infants of various ages, published results which showed that the plasma prothrombin levels (by their two-stage titration technic) were only about half as high as in adults. Further studies (by the Quick prothrombin time test and their own two-stage and bedside tests) on 38 normal infants revealed that between the second and sixth days of life there occurred a sharp though transient fall in values which had not been recognized in their first studies. At the end of five to seven days of life all tests revealed practically the same values as prevailed at birth.

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In 1939 Quick and Grossman[7] published a study of 10 newborn infants which showed that the prothrombin time level at six hours of life is not strikingly different from that of cord blood, that the level begins to fall at the end of 24 hours, and that an upward tendency is apparent at the end of 48 hours. Other observations to the same general effect were made by Dam, Tage-Hansen and Plum,[8] Waddell and Guerry,[9] Hellman and Shettles,[10] Shettles, Delfs and Hellman,[11] and others.

Since the highly fatal bleeding of newborn infants occurs within the period in which a decreased prothrombin concentration had been observed in these various studies, the cause and effect relationship was immediately apparent. The explanation of the decrease and of the subsequent elevation was, however, somewhat more obscure. Owen and his associates[12] suggested that in the plasma of newborn infants prothrombin conversion occurs quite rapidly, thus compensating for a relative deficiency in amount. Quick and Grossman reasoned that there is apparently no built-up reserve of vitamin K in the fetus and that in the first 24 hours of life the clotting factor may be reduced to such a degree that all newborn infants are in definite jeopardy of hemorrhage. During the first 24 hours, furthermore, not sufficient food is taken to furnish any significant amount of the antihemorrhagic vitamin. Why, then, do all infants not bleed instead of only a few? Quick and Grossman pointed out that vitamin K is produced by bacterial action, it having been shown that significant amounts are produced in the feces by rats and chicks fed a vitamin K-free diet. It is logical to assume, therefore, that as soon as the baby ingests food or water, regardless of the amount or kind, the intestinal contents, normally sterile at birth, immediately become infected, and the synthesis of vitamin K is thus begun. Its absorption is brought about with the aid of bile, and the risk of bleeding due to prothrombin deficiency is usually ended.

This is substantially the explanation now accepted by most workers in this field. Some have considered hemorrhagic disease in infancy a nutritional disease. At present it seems better merely to describe it as a disease of newborn infants characterized by subcutaneous, intramuscular and gastrointestinal hemorrhages, and anemia, and attended by a death rate which may be as high as 50 to 80 per cent. It is also, as Waddell and Guerry note, attended with a high percentage of remote physical and mental disability.

With the demonstration of lowered prothrombin concentration levels in newborn infants, the method of correction was obvious, the provision of an adequate supply of vitamin K. This form of therapy was employed, with striking success, at almost the same time, by a number of observers, including Dam and his associates, Hellman and his group, and Waddell and Guerry, the study by the latter investigators being particularly complete and carefully controlled. In most instances the vitamin K was administered directly to the children. Hellman and his associates also administered it to the mothers prior to delivery, finding an improvement in the plasma prothrombin of the infants even when the maternal administration covered only the period of 24 hours immediately preceding delivery.

PERSONAL STUDIES

Our first studies[13] on the bleeding tendency of the newborn consisted of a series of control determinations on infants and their mothers by the Quick prothrombin time test, the bedside test of Ziffren and his associates,[14] and the Boyce serum volume index.[15] All tests (table 1) revealed practically the same general tendencies: The maternal values, generally speaking, were somewhat lower than normal, perhaps because the studies were made during the winter months, when the natural supply of vitamin K in the diet is somewhat less than in the summer months. The values for newborn children (by all three tests) were substantially lower than normal adult values on the first day and were still further decreased on the third day of life. There was a notable increase in values in most cases,

usually to considerably above the level at birth, on the fifth day.

The values in infants in some cases at birth, in many cases on the third day, and in occasional cases on the fifth day were well within the range which by the usual standards in all tests would be considered potentially or actually indicative of hemorrhage, yet none of these children bled. Quick and Grossman had reported two cases in which infant prothrombin concentration values were as low as 7 per cent, and others had made similar observations. There seems no doubt, therefore, that a fresh set of standards will have to be devised for infants, regardless of the test of bleeding tendency used.

Following the control studies just described, studies were made with various types of vitamin K therapy. Vitamin K, in the form of thyloquinone (Squibb) was administered to 21 mothers for periods varying from two days to two weeks before delivery with no perceptible results except that the fall in values on the third day was somewhat less than in the control cases, the results being approximately the same whether 1 mg. or 2 mg. doses were used (table 1). This observation is not in agreement with the observations of Hellman and his group, who found a marked increase in the prothrombin concentration values of newborn children when the maternal administration of vitamin K took place even a few hours before delivery. The discrepancy in the findings may perhaps be explained by variations in the thromboplastin used for the tests. It has been pointed out by several observers that this is a definite source of error. In the light of the well established fact that there is no storage of vitamin K within the body, we consider our own failure to affect infant values by its maternal administration to be entirely reasonable.

The vitamin was next administered directly to the infants at birth and for a period of four days thereafter. When it was used in 1 mg. doses the usual fall in values did not occur on the third day of life and the values on the fifth day were somewhat higher than at birth (table 1). When the vitamin was administered in 2 mg. doses, the values on the third day were considerably higher than at birth, and by the fifth day they were still further increased, in most cases being within the safe normal adult range (table 1).

MATERIALS AND METHODS

The observations described were made on 41 mothers and 111 children (63 white, 48 colored) and involved a total of more than 450 single tests. No appreciable racial differences were noted in the values. Also no differences in values were noted between children with physiologic jaundice and those in whom it was not present.

After an adequate number of comparative tests had been made to make clear that the trend of values was the same whatever test was used, the great majority of the remaining tests were made by the Boyce serum volume index. It requires only a syringe and a test tube for its performance,

TABLE 1

SUMMARY OF STUDIES ON THE BLEEDING TENDENCY IN NEWBORN INFANTS*

Birth	Third day	Fifth Day	
94%	92%	92%	Prothrombin concentration (Ziffren et al. bedside test) in 10 mothers
66%	49%	66%	Prothrombin concentration (bedside test) in 10 children born of these mothers
0.82	0.85	0.86	Boyce serum volume index in 11 mothers
0.78	0.63	0.74	Serum volume index in 11 infants born of these mothers
0.75	0.71	0.81	Serum volume index in 10 infants born of mothers treated with 1 mg. thyloquinone for varying periods before delivery
0.76	0.70	0.83	Serum volume index in 9 infants born of mothers treated with 2 mg. thyloquinone as above
0.67	0.71	0.78	Serum volume index in 11 infants treated with 1 mg. thyloquinone immediately after birth and for four days thereafter
**0.71	0.83	0.95	Serum volume index in 11 infants treated with 2 mg. thyloquinone as above

*All figures represent averages.

**Note the absence of the usual third-day fall and the rise to normal adult values in children thus treated.

and its extreme simplicity therefore made it the most generally applicable for our purposes. It was used in more than 350 single tests. Commercial thromboplastin has become available to us since we began our studies and should eliminate the previous sources of error resulting from variations in the laboratory-prepared material.

Securing the blood for these studies has furnished something of a problem, particularly in children with a hemorrhagic diathesis, in whom the loss of even a small amount of blood might sometimes introduce a factor of risk. Blood for the tests made when we first began the study was taken from the cord and the values were compared with the values in blood secured from the fontanel or vein. We found that the values for the blood from the cord were somewhat higher than for blood secured from other sources (the serum volume index for the cord blood in 11 cases was 0.82, as compared with 0.78 for venous blood). This is at variance with the observations of Rush[16] who found the values in the two sources approximately the same by the Quick prothrombin time test.

Blood for succeeding (postnatal) tests was secured either from the anterior fontanel or from the external jugular vein. Securing it is not always easy and is sometimes not entirely free from risk in a newborn infant, particularly a child who is premature or who should not for other reasons be subjected to any avoidable strain. We have had no experience with the plan suggested by Bray and Kelley[17] of securing blood from the heel.

The vitamin K used was either in the form of klotogen Abbott, a natural concentrate, or in the form of thyloquinone Squibb, a synthetic preparation (2-methyl-1, 4-naphthoquinone). Klotogen is available in gelatin capsules containing 1,000 Almquist units, and in oil, each cubic centimeter of which contains 1,250 Almquist units of vitamin K; each Almquist unit is equivalent to 37.5 Dam units. Thyloquinone is available in 1 mg. capsules containing 2,000 Ansbacher or 40,000 Dam units, and in oil solution, each cubic centimeter of which contains the same number of units as the capsule. Both preparations were put directly into the child's mouth by medicine dropper. With neither, regardless of the amount used, was there any evidence of toxicity or any other disturbance from its use.

FRANK HEMORRHAGIC DISEASE OF THE NEWBORN

Four cases of frank hemorrhagic disease were studied by the bedside test and treated with klotogen and one by the Boyce serum volume index, and treated with thyloquinone. The summarized histories follow:

CASE NO. 1

A negro female infant, born of a 15 year old primiparous mother, delivered by low forceps, weighed eight pounds four ounces at birth. Bleeding from the cord began on the first day of life. On the fourth day ecchymotic spots appeared over the entire body and a large hematoma was seen in the left cephalo-parietal region. On the fifth day profuse bleeding occurred for 10 minutes after venipuncture. Local applications of silver nitrate and the intramuscular injection of 20 c. c. of whole blood had had no perceptible effect on the hemorrhage, and on the sixth day the prothrombin concentration was too low to estimate. At this time klotogen (10 drops) was given every three hours, administration being continued for 10 days. Within 24 hours all bleeding had ceased, and on the seventeenth day of life the prothrombin concentration was 84 per cent. The child was discharged in good condition at the age of three weeks.

CASE NO. 2

A white female infant, born of a 25 year old mother (para I, gravida III) delivered by low cesarean section because of fetopelvic disproportion, weighed 10 pounds eight ounces at birth. Two days after birth the baby vomited blood and on the third day ecchymotic spots appeared over the body, the stools were tarry, and the prothrombin concentration was too low to calculate. A transfusion of 50 c. c. of whole blood had been without perceptible effect. At this time klotogen (10 drops) was given every three hours before each feeding, the administration being continued until the tenth day of life. Bleeding ceased entirely within 48 hours after the medication was begun. The prothrombin concentration was 16 per cent on the eighth day of life and 100 per cent on the eleventh day. The baby was discharged in excellent condition on the twelfth day.

CASE NO. 3

A colored female infant, born of a 25 year old mother (para IV, gravida V) delivered spontaneously, weighed six pounds at birth. Tarry

stools were observed two days after birth, at which time the red blood cell count was 2,460,000 and the hemoglobin 66 per cent. The prothrombin concentration was too low to calculate. A transfusion of 45 c. c. was given on the second day, together with 60 c. c. of whole blood by intramuscular injection, and a second transfusion of 60 c. c. of whole blood was given on the third day. At this time klotogen (10 drops) was begun and was given every three hours for the next seven days. Bleeding stopped entirely on the fourth day. The prothrombin concentration was 100 per cent on the seventh and eighth days. The child was discharged in good condition on the twenty-second day of life.

CASE NO. 4

A colored female infant, born of a 17 year old primiparous mother, delivered by low forceps, weighed seven pounds three ounces at birth. Bleeding from the cord occurred on the fourth day and was treated by local application of silver nitrate and a compression bandage. On the fifth day ecchymotic spots appeared over the arms and body, and bleeding occurred from the nose and rectum. The bleeding time was 8 minutes, the coagulation time 9 1/2 minutes, and the prothrombin concentration too low to calculate. Fifteen cubic centimeters of whole blood was given intramuscularly, and klotogen (10 drops) was given every three hours for six days. Bleeding stopped within 24 hours of its administration. The prothrombin concentration was 25 per cent on the sixth day and 97 per cent on the seventh. The child was discharged in good condition on the eighth day.

CASE NO. 5

A colored male child, born of a 24 year old mother (para IV, gravida VII) delivered spontaneously, weighed five pounds three and a half ounces at birth. On the third day of life the child vomited blood. At this time the serum volume index was 0.50 and the clot extremely friable. Thyloquinone (10 drops) was begun immediately every three hours and was continued for the next four days. Bleeding did not recur. Two days after the hematemesis a resident, who for some reason had not secured the history of previous bleeding, clipped a frenulum under the child's tongue, a procedure which in such cases would ordinarily be attended by serious risk. There was no bleeding in this instance. The serum volume index on the seventh day of life was 0.56 and the clot fair; on the fourteenth day it was 0.72, and the clot was firm and well retracted. The child was discharged in good condition on this day.

COMMENT

It is not unreasonable to assume that in the last case the bleeding did not progress to the point to which it progressed in the four other cases because vitamin K was administered immediately, whereas its administration was delayed for from 24 to more than 100 hours in the other cases. The last case is also of interest for two other reasons: (1) It is the only instance in which no other type of therapy was used, and the control of the hemorrhagic tendency can thus be attributed to nothing but the specific therapy; (2) the clipping of the frenulum under the tongue, as has already been noted, subjected the child to an additional risk which was not present in any of the other cases.

SUMMARY AND CONCLUSIONS

1. The bleeding tendency in newborn infants has been studied by the Quick prothrombin time test, the Ziffren et al. bedside test and the Boyce serum volume index. In all, more than 450 single tests were made on 41 mothers and 111 children.

2. All tests showed that infants are born with lower than normal values, which fall still lower on the third day of life, but which reach the birth values or higher by the fifth day.

3. The prepartal administration of vitamin K to the mothers had no perceptible effects on the infant blood values. The administration of vitamin K directly to the children in 1 mg. doses practically eliminated the usual fall in values on the third day of life. When the vitamin was used in 2 mg. doses the values rose steadily from birth and approximated normal adult values on the fifth day of life.

4. The majority of the tests were made with the Boyce serum volume index which showed precisely the same trends as the other tests used, and is infinitely simpler to perform.

5. Five cases of frank hemorrhagic disease are reported, the bleeding in all of which was promptly and permanently checked by the use of vitamin K. None of these children had any vitamin K until after the bleeding began. The bleeding was least in the case in which vitamin K was administered as soon as it appeared, though this particular child was unwittingly subjected to the additional risk of a minor procedure

on the tongue two days after the initial hemorrhage.

6. Bleeding did not occur in any instance in which vitamin K was administered at birth and continued throughout the first five days of life.

7. The suggestion of Waddell and Guerry, that no surgical procedure be performed on any newborn infant without the prophylactic administration of vitamin K, is eminently sensible.

8. The present cost of vitamin K preparations makes their routine administration to newborn infants, at least in public practice, entirely impractical. With the reduction in cost which will undoubtedly be achieved soon, it would be a wise precaution to employ it routinely in all cases for the first several days of life, since there is still no way of determining at birth which children are likely to bleed.

9. It is not too much to say that the proper application of vitamin K therapy should reduce to negligible figures the mortality from the type of hemorrhagic disease of the newborn due to this specific deficiency.

ADDENDUM

After this article had been completed, another report on their work was published by Hellman and his associates at Johns Hopkins Hospital (Hellman, L. M., Moore, W. T., and Shettles, L. B.: Factors influencing plasma prothrombin in the newborn infant. III. A study of the vitamin K activity of various naphthohydroquinone derivatives, Bull. Johns Hopkins Hosp., 46:379, June, 1940). Their conclusions are added for the sake of completeness:

1. Small, unit-equivalent doses, 2-methyl-1, 4-naphthoquinone, 2-methyl-1, 4-naphthohydroquinone dipropionate, and 2-methyl-3-phytyl-1, 4 naphthoquinone, dissolved in oil are capable of raising the plasma prothrombin of the newborn infant when given by mouth to the mothers during labor.

2. In similar doses intravenous 2-methyl-1, 4-naphthohydroquinone-3-sodium sulfonate is shown to possess significant vitamin K activity.

3. On the contrary, under identical conditions, 2-methyl-1, 4-naphthoquinone in milk-sugar pills, and vitamin K concentrate, by mouth, and 2-methyl-1, 4-naphthohydroquinone-3-sodium sulfonate, intramuscularly, could not be shown to be effective in raising the plasma prothrombin levels of the newborn infants.

NOTE.—Our thanks are due to Drs. E. L. Levert and Bertha Wexler of the Pediatric Service of the Tulane University School of Medicine, who cooperated with us in several of the reported cases; to Dr. Frederick F. Boyce, who assisted us throughout the investigation with advice and suggestions; and to the Abbott Laboratories and E. R. Squibb and Sons, who supplied the materials with which the studies were carried out.

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DISCUSSION

Dr. Frederick F. Boyce (New Orleans): So far as I know, Dr. Leidenheimer's study of hemorrhagic disease in the newborn is the first to be made from this particular part of the country. For that matter, only a very limited number of such studies are on record either here or abroad. In general, his data and results corroborate those of other observers.

Hemorrhagic disease of the newborn differs in an important respect from the similar diathesis in jaundice. Both are unquestionably due to a de-

ficiency in the prothrombin content of the blood, which in turn is due to a deficient absorption of vitamin K. But in the jaundiced patient the deficient absorption is due to the absence of bile salts in the gastrointestinal tract. In the newborn child it is due to an actual absence of vitamin K.

It has been rather generally established that the level at which infants bleed is considerably lower than the level at which adults bleed, regardless of the test used to demonstrate the hemorrhagic diathesis. This statement holds for the serum volume index, which Dr. Leidenheimer has used in most of his cases.

Since the bleeding tendency in newborn infants is due to a vitamin K deficiency, the logical method of prophylaxis would seem to be the routine administration to all infants of some concentrated or synthetic preparation. This is not so simple as it seems, for the price of either type of preparation is still too high to make routine administration possible. A satisfactory alternative would be the testing of all newborn children for a possible bleeding tendency, with the immediate administration of vitamin K when the values fell within the range which previous experience has shown to be dangerous. There seems to be no reason for failure to administer vitamin K immediately to any child who bleeds, without waiting for tests or trying any other method of treatment. If the bleeding proves to be due to some other cause than vitamin K deficiency, as happens in a certain proportion of cases, the tentative administration will have done no harm. If it is proved to be due to this deficiency, the prompt administration may be lifesaving. The prompt control of the bleeding in Dr. Leidenheimer's fifth case, in which vitamin K was administered at the first sign of bleeding, as compared with the results in the other cases, in which other methods were tried first, makes this point apparent.

Dr. Leidenheimer has commented on his failure to influence the infant values by the maternal administration of vitamin K and the success of certain other observers by this method. The explanation may lie in variations in the thromboplastin used, or some other, less apparent factor may be the cause. For my own part, I do not see how the maternal administration of vitamin K could be expected to secure any but the most transient improvement in the child. If the present concept of prothrombin production and concentration is correct, there is no preformed storage of vitamin K in the body, and treatment of the mother could affect the child only so long as the child remained *in utero*. Once the cord is divided, only direct administration of vitamin K to the child could permanently raise the prothrombin of the blood.

FURTHER STUDIES OF THE CAUSES OF BLINDNESS IN LOUISIANA*†

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Next to death, perhaps the greatest tragedy befalling a human being is blindness. Viewed in the other direction eyesight, next to life itself, is our most cherished possession. Yet, it is remarkable how uninformed and indifferent the great majority of people are concerning the eyes and their proper care. They seem not to realize that the eye is a complicated, delicate and highly specialized organ of the body, reacting to all body ailments and that it is afflicted by over three hundred diseases. They fail to realize that the eye is an inseparable organ of the body requiring the same medical skill and meticulous care as do the heart, lungs, kidneys, central nervous system, digestive apparatus and other tissue systems of the body.

This very lack of information, coupled with profound indifference on the part of both the medical profession and the public, can be held responsible for a great portion of the blindness in Louisiana and the nation. This statement can be readily understood when it is realized that a great number of the blind in our State have never consulted or had the services of an eye physician and surgeon. Nearly all, however, have bought numerous pairs of glasses with which to cover up their progressive organic diseases.

This study of the causes of blindness in Louisiana was first reported on in this journal in October 1938, at which time an analysis of 700 cases was presented, and a series of observations and recommendations set forth. Over eleven hundred cases have now been subjected to analysis. Percentages have been figured for all causes of blindness of 1 per cent or more. Those etiologic factors causing less than 1 per

*Read before the Orleans Parish Medical Society, May 18, 1940.

†First Report, New Orleans M. & S. J., 91:166, 1938.

cent blindness are listed last. Conservatively estimated it can be stated that 73 per cent of this blindness could have and should be prevented.

CAUSES OF BLINDNESS AND PERCENTAGES

Syphilis	15.1
Glaucoma	10.9
Congenital diseases and defects	9.9
Lacerations and burns	4.9
Senility	4.3
Gonococcal infections	4.1
Hereditary diseases	4.0
Pyogenic infections in infants (non-gonococcal)	3.9
Gunshot wounds	3.3
Toxic poisoning	3.0
Consanguinity	2.0
Typhoid fever	1.7
Juvenile cataract	1.7
Meningitis	1.6
Trachoma	1.6
Diabetes	1.4
Not known	1.4
Infections undifferentiated	10.6
Secondary cataract	1.3
Injuries undifferentiated	1.1
Sinusitis	1.0
Infected teeth	1.0

The following conditions were responsible for less than 1 per cent: Pterygium, pemphigus, trichiasis, scarlet fever, smallpox, tuberculosis, pneumococcus, influenza, encephalitis, infections not specified, fireworks, industrial injuries, diseased tonsils, Banti's disease, malaria-quinine, gallbladder disease, brain abscess, brain tumors, toxic goiter, faulty diet, pellagra, anemia, nephritis, vascular disease, multiple sclerosis, toxemia of pregnancy.

It must be pointed out that in many cases the blindness resulted not from one, but from several causes often acting at the same time. An example would be a syphilitic having diabetes, foci of infection and subsisting on an improper diet. Another example would be a tuberculous patient with foci of infection, ulcerative colitis and anemia. In actual practice, private and clinical, innumerable combinations of etiologic factors are encountered and proper treatment must be just as variable. Often eye complications develop in the course of infectious diseases but are overlooked or considered lightly until the eye is either gravely damaged or even lost. Eye injuries are always serious but should invariably receive very special care in persons having some general debility already such as anemia, diabetes, thyroid dysfunction, foci of infection or other conditions.

CONCLUSIONS

The prevention of blindness and conservation of vision is primarily a task for the medical profession. However, the responsibility must be shared with other groups and organizations especially in the realm of public education concerning the eye and its proper care in health and disease.

TEN-YEAR SURVEY OF ANTILUETIC THERAPY AT THE EYE, EAR, NOSE AND THROAT HOSPITAL*

W. E. KITTREDGE, M. D.
NEW ORLEANS

This presentation is intended as a brief survey of the results obtained in the treatment of syphilis at the Eye, Ear, Nose and Throat Hospital since the inception of the antiluetic clinic ten years ago.

During this time 272 persons have applied for treatment. It is interesting to note that 48 per cent of that number have appeared in the last two years, showing a greater general awakening to the ever present possibility of syphilitic etiology for various common lesions and also a better system for the diagnosis of syphilis. In this connection it is interesting to note that 64 patients, or 23 per cent of the total, had no complaint at all and were diagnosed by routine Wassermann tests.

There were a total of 16 different types of lesions of the eye diagnosed as luetic, 11 of the nose, seven of the throat and two of the ear. Of these the five most common were:

Case	Per cent	No.
Optic atrophy	7	18
Keratitis	14	37
Pharyngitis	9	23
Cataract	6	16
Iritis	5	14
Total	41	108

*Read before the Orleans Parish Medical Society, May 13, 1940.

The total number of treatments given were: Arsenicals, 1,763; bismuth, 3,316; mercury (weeks) 709. It is an interesting and sad commentary on the present lack of control of syphilitics to note that 105 patients, or nearly 40 per cent of the total, received less than eight weeks of treatment. This is all the more important when it is considered that eight weeks of treatment has been established as the minimum amount with which any definite clinical improvement may hope to be obtained. Of the total patients treated only 14, or 5 per cent, received sufficient treatment to be classed as cured.

Of those patients receiving adequate or semi-adequate treatment, it was possible to arrive at the following grouping in regard to prognosis and results. Good results were obtained generally in cases of keratitis, iritis, iridocyclitis, corneal ulcers, uveitis, conjunctivitis, pharyngitis, ethmoiditis and facial paralysis. Results were poor in cases of glaucoma, optic atrophy, macular degeneration, gumma of the septum and sinusitis.

Fortunately, I am able to report that the number of adverse reactions to treatment were negligible. One case of arsenical dermatitis occurred but no other serious reaction was seen in any case. This good record, I think, is attributable to two factors: First, that preliminary courses of bismuth are usually given to these patients in order to begin treatment more or less gradually; second, that no excessive doses of arsenic are ever used, and for the past several years we have used mapharsen almost exclusively which enables us to provide adequate arsenical treatment with a minimum amount of actual arsenic administration.

ACUTE EUSTACHIAN TUBE OBSTRUCTION*

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The eustachian tube, in its normal healthy state, serves the important functions of maintaining atmospheric pressure in the middle ear and of allowing secretions to leave the middle ear cavity. The tube is about one and one-half inches long, extending from the anterior inferior portion of the middle ear medially, downward, and forward to its orifice on the lateral pharyngeal wall just above the level of the soft palate and behind the posterior end of the inferior nasal turbinate (concha). In infancy and childhood, the tube is shorter and is almost in a horizontal position. The lining epithelium is of the ciliated, columnar type and is continuous with the pharyngeal mucous membrane.

The pharyngeal orifice of the eustachian tube is bounded above and behind by a ridge, the eustachian cushion, which is formed by the projection of the cartilage of the tube. There are many lymph follicles in and about the orifice, and the adenoid is nearby when it is present. In its vulnerable position, the pharyngeal end of the tube is subjected to risk of infection by extension from the nose or throat or may be the site of reactionary swelling due to inflammation in the tonsils, pharynx, or nose. The swelling may cause obstruction at the pharyngeal orifice or at the narrow isthmus of the eustachian tube. It has been shown that the ciliary flow of mucous and other nasal secretions divides so as to avoid the eustachian tube orifice, but, in acute rhinitis and sinusitis, where the exudates are profuse, the mechanism is insufficient for its protection. A swollen adenoid very often may be the cause of closure of the eustachian tube orifice.

SYMPTOMS

The first symptom referable to the ear, noticed when the eustachian tube has been closed, is that the ear feels stopped up, and there is, perhaps, an impairment of hearing. When blocking is not complete and the tube allows air to enter the middle ear periodically, a popping or cracking noise is heard in the affected ear which is followed by a period of relief from the stopped-up feeling. This popping is noticed particularly

*Read before the Orleans Parish Medical Society, May 13, 1940.

after swallowing or forceful opening of the mouth which opens the eustachian tube orifice.

If the tube remains closed, air within the middle ear is absorbed, and pressure is reduced below atmospheric pressure. The tympanic membrane is retracted, and the more serious effects of eustachian tube blocking begin to take place. A transudation of serum occurs, and any effort (swallowing) on the part of the patient to clear the ear is futile. This serum is a fertile culture medium, and, usually, pathogenic organisms from the nasopharynx and eustachian tube find their way to start an active infection in the middle ear. Ear pain may occur at any time during this chain of events; first, from inflammation of the tube itself, and, finally, from acute otitis media. Eustachian tube blocking is one of the most frequent causes of loss of hearing, and it is the most important because almost all cases can be cured. Hearing of all tones is affected in complete obstruction with the loss in the low tones most noticeable. It is noteworthy, however, that in partial or intermittent blocking, the very high tones (above 8,000 double vibrations) are the first to be affected.

TREATMENT

The treatment of this condition begins with the removal of the cause. Nasopharyngeal inflammation should be treated, and sinus infection cleared up. The upper air passages should be kept open by using vasoconstrictor drugs, and they should be kept free of secretions. If tonsillitis and adenoiditis are present, these parts should be treated preparatory to removal later. Lymphoid masses about the pharyngeal orifice may be treated by radiation if they persist after the acute stage subsides. Applications may be made under vision by using the nasopharyngoscope when necessary.

Daily pneumatic massage of the drum is helpful, especially in early cases in preventing progress of the middle ear pathology and in promoting the comfort of the patient. Inflation of the eustachian tube is to be avoided when acute inflammation is present in the nose or nasopharynx because of the obvious danger of forcing contaminated material into the middle ear.

Acute eustachian tube blocking without complications and with prompt treatment usually has an uneventful, complete recovery. Careful hearing tests, preferably with an audiometer, should be done before discharging the patient. Very often, there are losses at one or more tones which may be regained by gentle, periodic inflation of the tube, either by the Politzer method or by catheterization. Hearing losses not restored promptly may be permanent. The patient who has developed a serous or purulent otitis media must be taken care of as such and so should other complications.

The prevention of recurrences is important. Nasal infections or deformities are eliminated, and excess lymphoid tissue in the nasopharynx is removed or treated by radiation.

SUMMARY

1. The eustachian tube is important in the maintenance of air pressure and in preventing accumulation of secretions in the middle ear.

2. It is in a position that makes it vulnerable to inflammations and blocking of the nasopharynx.

3. Blocking of the tube is serious because (a) hearing loss will follow, and (b) middle ear infection is likely.

4. The treatment is, essentially, the removal of causes, followed by treatment of the tube and ears to get the hearing back to normal.

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THE USE OF PROSTIGMIN METHYLSULFATE IN DEAFNESS

A PRELIMINARY REPORT*

L. W. ALEXANDER, M. D.†
NEW ORLEANS

The addition of prostigmin to otolaryngology is an advance in therapy that is worthy of consideration. This drug has been used in other branches of medicine to stimulate peristalsis and overcome bladder atony, but it was not until May, 1939, when an article entitled "The Treatment of Deafness and Contiguous Nervous Disorders with Prostigmin" appeared in the Archives of Otolaryngology by Davis and Rommell, that this drug was used in the treatment of deafness. So far as I am aware no other authors have reported their observations in otolaryngology with prostigmin. This preliminary report prompted me to try prostigmin. In this paper I will attempt to give my results.

CHEMISTRY OF THE DRUG

Chemically prostigmin methylsulfate is the dimethyl-carbamic ester of m-oxyphenyl-trimethyl ammonium methylsulfate. It is a white, odorless, crystalline powder with a bitter taste, freely soluble in water and to a lesser degree in alcohol. It is a synthetic compound manufactured by Hoffman-La-Roche, Inc., and resembles physostigmin, but differing from this alkaloid chemically by its less complicated structure and its greater stability. Prostigmin bromide, for oral use, is the di-methyl-carbamic ester of m-oxyphenyl-trimethyl ammonium bromide. Pharmacologically, prostigmin is marked by the almost complete absence of cardiac by-effects.

ACTION OF PROSTIGMIN

The action of prostigmin in otology may come up for discussion. Davis and Rommell have brought out the fact that the muscles of the ear and face have a common embryologic origin and a common innervation. In cases of myasthenia if the muscles of the face are stimulated by prostigmin, the muscles of the ear are also stimulated. Prostigmin is a stimulant to the parasympathetic nervous system. In otology the internal carotid plexus must be considered to understand the action of prostigmin. It communicates by five branches with (a) abducens nerve, and (b) semilunar ganglion and gives off (c) the great deep petrosal and (d) the carotico-tympanic nerves. The deep petrosal nerve joins the greater superficial petrosal nerve from the geniculate ganglion of the facial, in the foramen lacerum. By their union the pterygoid nerve is formed, which after traversing the pterygoid canal, ends in the sphenopalatine ganglion. The carotico-tympanic nerves pass to the tympanic plexus. This plexus, formed by the carotico-tympanic nerves, the tympanic branch of the glossopharyngeal, and a twig from the geniculate ganglion of the facial nerve, is placed on the labyrinth wall of the tympanum. It supplies the mucous lining of the tympanum and the auditory tube, and the lesser superficial petrosal nerve passes from it to the otic ganglion. By giving prostigmin, the tympanic plexus that supplies the mucous lining of the tympanum and the auditory tube are stimulated.

From the above it will be seen that prostigmin is of value in cases where there is pathology in the tympanum and the auditory tube. The pathology may be an accumulation of mucous, desquamated cells, or other products that have arisen from an inflammatory process in the tympanum or eustachian tube. By stimulating the parasympathetic system with prostigmin, the tympanic cavity or eustachian tube is freed of any foreign matter.

Clinically I have found prostigmin to be of value in several types of conductive deafness. In cases of acute tubotympanitis, prostigmin hastens recovery. It does not supplant other treatment, but it is an adjunct to the present accepted treatment. Another type of conductive deafness is in cases that present the end stage of acute suppurative or non-suppurative otitis

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media, where there is present an accumulation of pathologic material in the tympanic cavity. Prostigmin hastens a return to normal hearing in this type of case along with other accepted treatment.

In chronic catarrhal otitis with or without tinnitus, there is another type of conductive deafness that is improved by prostigmin. This type of patient goes from physician to physician seeking some improvement in his hearing; any improvement is greatly appreciated by the patient. Likewise, the patient with the tinnitus is most grateful if you can help him. Prostigmin does improve the hearing and diminish the tinnitus in 50 per cent of the chronic catarrhal types of conductive deafness. Prostigmin is of no value in otosclerosis or nerve deafness.

In my series of 80 cases, 20 were cases of acute tubotympanitis, six were cases presenting the end stage of acute suppurative or non-suppurative otitis media, 44 were chronic catarrhal otitis media, five were cases of tinnitus alone, five were cases of facial neuralgia. The 20 patients with acute tubotympanitis were given 1 c. c. of 1-2000 solution of prostigmin methylsulfate every 48 hours, along with the usual accepted treatment. None of these patients required more than three doses. This treatment was used in several patients after the usual treatment had been used and the hearing had not improved. Prostigmin in these cases produced almost an immediate improvement in hearing, as well as the tinnitus. The six patients who presented the end stage of acute suppurative or non-suppurative otitis media, were given prostigmin and the hearing returned to normal after three doses, which were given at 48 hour intervals. Gentle politzerization and massage were also used along with local treatment of the nasal pharynx.

RESULTS OF TREATMENT

My results with the 44 cases of chronic catarrhal otitis media with or without tinnitus may be summarized as follows: Sixteen patients showed good recovery in hearing; 13 patients stated that their acuity of hearing was better, but audiograms failed to reveal any improvement; five persons with tinnitus were relieved with no improvement in hearing; the remaining ten patients showed no improvement. It was interesting to note in cases of bilateral chronic catarrhal otitis media where the hearing was only partly lost in one ear and almost completely lost in the other ear, that prostigmin produced an improvement in the good ear only.

These patients were given 1 c. c. of 1-2000 prostigmin methylsulfate twice a week, along with catheterization and massage. Two patients had a recurrence of tinnitus; one patient reported after a month and the other after two months with a return of the tinnitus. These two patients are still under treatment and have shown a definite improvement.

In the five cases of tinnitus with no loss of hearing, prostigmin changed the character of the tinnitus after the first injection. Three patients were completely relieved, and in the other two the tinnitus was lessened to such an extent that it was hardly noticed. These patients were given prostigmin twice a week and no other treatment.

Five cases of facial neuralgia were immediately relieved with prostigmin alone. These patients are now under observation and so far only one has had a recurrence and he was relieved by a single dose of prostigmin.

CONCLUSIONS

1. Prostigmin is a stimulant to the parasympathetic nervous system which supplies the mucous lining of the tympanum and auditory tube. It is of value in the following types of conductive deafness: (1) Acute tubotympanitis; (2) end stage of acute suppurative or non-suppurative otitis media, (3) chronic catarrhal otitis media with or without tinnitus.

2. Prostigmin should be used as an adjunct to other accepted treatments. Tablets of prostigmin bromide may be given three times a day.

3. Patients with acute pathology in the tympanum or eustachian tube, usually do not require more than three doses of prostigmin.

4. Patients with chronic catarrhal otitis media with or without tinnitus require several months of treatment, prostigmin being given twice a week.

5. Prostigmin has a definite value in cases of facial neuralgia.

6. No contraindications were found in any of my cases; two patients experienced slight nausea, which was relieved by eating.

7. The scientific rationale of this treatment may be questioned. Since the results have been better than treatments previously employed I recommend them for your consideration and study.

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DISCUSSION

Dr. Charles L. Cox (New Orleans): Otolaryngologists for years have been criticized for the lack of advancement in the treatment for the hard of hearing. A patient beginning to get deaf had little, if any, prospect of having his deafness treated with any degree of success. Since the advent of sulfanilamide there has been a revival of interest and hope in chemotherapy for many conditions formerly believed incurable and beyond help.

Prostigmin methylsulfate has shown great possibilities in relieving deafness. My experience with the drug has been more or less limited, but I have been gratified by the results in most of my patients in whom it was used. Audiometric readings must be made before and after treatment so as to record the amount of improvement. Prostigmin alone is not enough. All existing sinusitis must be treated, and the eustachian tubes must be inflated periodically.

Dr. J. C. Howard (New Orleans): In the last six months, I have treated about forty cases of deafness with the use of prostigmin in the Hard of Hearing Clinic at the Eye, Ear, Nose and Throat Hospital. My results have been similar to those of Dr. Alexander.

I found in five cases of young women, with tenderness almost unbearable, immediate relief after a series of ten shots. However, we found that during the menstrual and before the menstrual period these head noises came back and we combated this with an increase of the number of injections the week prior to menstruation and gave another injection on the day of onset of menstruation. We have had very gratifying results and all reported absolute relief or a great deal of relief and there was no effect on menstruation in any way.

Dr. Alexander (In closing): We have a hard of hearing clinic conducted at the Eye, Ear, Nose and Throat Hospital, where we are comparing results with prostigmin methylsulfate and hope to give a final report later.

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THE PHYSICAL DEFECTS IN THE DRAFTEES

In order that the physicians who are making examinations of the men who are appearing before the several Selective Service Boards might be acquainted with the results of the examinations that were made prior to the induction into service of men in 1917-18, the United States Public Health Service has published a summary of the defects per 1,000 total drafted men in this period. First it might be explained that roughly one-third of the men examined had defects which would be sufficiently serious to prevent their induction into service. However, minor defects were found in 52 per cent of these examinees. That they were only minor defects is shown by the fact that 40 per cent of them were called to arms.

Orthopedic impairments were the commonest of the defects that were discovered at this time. Some 213 per 1,000 of the men who were examined had this type of disability or defect. Eye troubles came next in frequency with 6.1 per cent, followed by hernia and cardiovascular renal disease in slightly over 5 per cent of all examined. Venereal disease claimed a fairly large number, 46 per 1,000, but other conditions dropped off rather abruptly, for example tuberculosis in all forms was found in only a little over 2.4 per cent of the men; defective teeth in approximately the same number, and of nervous and mental diseases exactly the same number. Such conditions as goiter, asthma, arthritis, varicose veins and the like were under 1 per cent.

A great deal of discussion has been raised as to the physical rehabilitation of these registrants who were disqualified from military service on the basis of one or another abnormal physical finding. It should be taken into account, however, that in the present draft undoubtedly there will be fewer men discovered who have heart disease, fewer men found who have tuberculosis and fewer men who have, for example, goiter; such conditions as far as these particular diseases are concerned have vastly improved during the last twenty-five years. The death rate from tuberculosis, for example, has dropped from 509 per 100,000 to 61 per 100,000 white males. Organic heart disease has diminished in frequency as well. It should also be pointed out that most of the defects are due to structural abnormalities which are classified in most instances as orthopedic impairments. There is not much, on the whole, that needs to be done for these men, nor is it necessary to do much about flat feet or bowlegs. In civilian life these men can

function as well and as satisfactorily as men who do not have these abnormal conditions. Therefore, it is unlikely that many of these people need to be "rehabilitated" and because one-third of the men are being rejected is no reason for the socialistic-minded to put out loud calls for state medicine. Causes for rejection in most instances do not handicap a man in civilian life. The causes for rejection for the most part have no relation to the man's ability to make a livelihood. The army wants the best and only the best, and borderline instances are rejected although in all probability most of the rejected men could function equally as efficiently in the field or in the camp as the men accepted.

It has been pointed out that it is quite possible that rejections will be fewer than anticipated and the causes for rejection will be extremely minor conditions. It should be stressed that for years physicians and educators and others have been urging periodic health examinations, or collaborating in obtaining them. Certainly many minimal defects would have been picked up and would have been remedied had such examinations been as extensively employed as they should have been.

MILK

Milk is one of the most valuable foods which is available to man. It is an essential in the diet of children. Unfortunately throughout the State of Louisiana there are certain glaring faults with our milk and with the milk supply that should be corrected. Only by assuring the public that the quality and the pureness of the milk can be guaranteed will this invaluable food be more generally used. Milk sanitation is one of the important functions of the state authorities.

The value of milk products is greater than any other farm product in the United States. As a matter of fact cash income from the sale of milk is more than twice that of cotton and cotton seed, and almost three times that of corn. Of all the states in the south-central region, Louisiana farmers obtain less income from the sale of milk than any other state. Our farmers in 1939 received $6,627,000 for the sale of milk, whereas in Mississippi the income was over $10,000,000, in Tennessee over $15,000,000 and Oklahoma over $21,000,000. The chief explanation for this is the fact that Louisiana has the smallest number of cows of any of these states. This seems to be a short-sighted policy by the farmers. The value of the cows themselves is very much less than other south-central states.

Louisiana produced 292,000,000 quarts, whereas Mississippi produced more than twice that amount. The milk production per cow averaged slightly over 1,000 quarts per year per cow, whereas in Oklahoma figures were 1,684 quarts and in some states, California for example, the figures were over 3,000. Evidently farmers not only are not raising enough cows but they are not feeding them properly. In the production of butter, Louisiana is so low that it cannot be compared to most of the states in the Union. The same thing applies to cheese, 334,000 pounds produced in Louisiana as contrasted with 2,000,000 pounds in Oregon and 284,000,000 in Wisconsin.

As it is true that milk is a farm product for which the farmer receives a greater share of the consumer's dollar than practically any other farm product, the farmer should be encouraged by the physician to produce more milk from better cows. The reasons for this procedure are obvious: First, in order to increase the farmer's income so that he might have more to spend, and secondly in order that this most valuable of foods should be produced locally where its quality can have proper sanitary supervision and where the physician is assured of its safety so that he can be more insistent than ever on his child clientele imbibing large quantities of the lacteal fluid.

SULFONAMIDE DRUGS

The last issue of the Journal of the American Medical Association which appeared in the month of January (Vol. 116, January 25, 1941) had a series of articles on the sulfonamide compounds. As a matter of

fact, practically the entire issue was devoted to this subject. As some of the articles had to do with rather unusual types of cases, and some rather rare complications, it might be well to point out the salient features of these presentations.

The first paper had to do with the treatment of pneumonia in infancy and childhood, using in one group of children sulfathiazole and in the other sulfapyridine. The study showed that sulfathiazole is just as effective as sulfapyridine. It might be mentioned that sulfathiazole has certain advantages over sulfapyridine which, if the two drugs are equally effective, would make it the drug of choice. Friedberg, in the next paper, gives an account of two patients with lobar pneumonia who had leukopenia; he mentions that leukopenia does not contraindicate the use of sulfapyridine, on the contrary it definitely indicates it as such cases are severe with a high mortality. In these instances the improvement was prompt and the leukocyte count rapidly became elevated. A San Francisco group called attention to the value of sulfanilamide in the treatment of actinomycosis. They cured three patients with this drug plus iodide and x-ray therapy.

The treatment of gonococcic infection with sulfanilamide has been equivocal in the various reports that have been published. Van Slyke, Wolcott and Mahoney deal with 300 cases of gonococcic infection treated with sulfapyridine, curing 85 per cent of the patients who had not previously had the drug and 70 per cent of those who had not been benefited by sulfanilamide. They say that sulfapyridine therapy should not be continued for longer than ten days and it "appears applicable to the comprehensive treatment needs of the disease." The treatment of pericarditis is usually unsuccessful. Nathanson finds that sulfanilamide and sulfathiazole diffuse freely in the pericardium and that these drugs are indicated when there is a pericarditis due to any one of the coccal organisms. The next paper is likewise an experimental study having to do with the pharmacology of sulfapyridine and sulfathiazole. This is of practical value because the authors point out that the sodium salts of these two drugs are absorbed more readily than the free acids and that if alkali in the form of bicarbonate of soda, or heavy magnesium, is given at the same time, the drugs are absorbed more rapidly from the gastrointestinal tract.

The succeeding paper has to do with the present status of the treatment of subacute bacterial endocarditis. The two New York contributors recount that in 200 cases of this condition due to the *Streptococcus viridans*, recovery occurred in 6.0 per cent in the patients to whom sulfonamide drugs were given; in 43 patients treated with these drugs and heparin the recovery was 11.5 per cent, in 24 patients treated by chemotherapy and hyperthermia recovery was 16.0 per cent, while in 21 patients treated by chemotherapy and hyperthermia induced by typhoid vaccine five recovered, or 25 per cent. Heparin therapy has been proved to be of value by others in the treatment of this disease. The blood stream should be sterilized with the chemicals and then the heparin should be started. Another paper on the same subject deals more fully with artificial hyperpyrexia plus chemotherapy. These authors point out that the effectiveness of the sulfonamide drugs is enhanced when there are high elevations of temperature.

A clinical report, having to do with recurrent pneumococcic meningitis treated with sulfapyridine, is presented by Craddock and Bowers. Their results were a cure. Sadusk and Nielson likewise effected a cure in a patient who had meningitis, staphylococcic in type, to whom sulfathiazole was given. The last paper in the scientific section has to do with the incidence of hematuria in patients treated with sulfonamide preparations. This complication occurred in 14.8 per cent of those treated with sulfathiazole and 10.7 per cent in those taking sulfapyridine.

Lastly, there is a report from the Council on Pharmacy and Chemistry on sulfathiazole which should be read by every one who administers this drug. This account has to do with the pharmacology of sulfathiazole, with the toxicity and lastly with the dosage. It is a splendid summary in every respect.

HOSPITAL STAFF TRANSACTIONS AND CLINICAL MEETINGS

J. T. NIX CLINIC

New Orleans

At the meeting held in February, Dr. James T. Nix, Jr., presented the following paper:

THE COLLODION SPRAY IN THE PREPARATION OF THE OPERATIVE FIELD

In the surgical scene, the skin alone defies sterilization. Micro-organisms float forth from its pores in a continual stream of sudoriferous and sebaceous fluid. The hands of the operating team are sheathed in rubber; the operative site receives no such mechanical protection. Ordinary preoperative preparation offers, at best, a relative sterility.

To circumvent the possibility of contamination, many forms of mechanical protection of the skin have been advocated: (1) Murphy's rubber dam; (2) liquid rubber; and (3) skin varnish.

The above preparations are opaque, obscure the operative site, and require elaborate, expensive and unwieldy equipment. They have never come into general use.

The sterile collodion spray or sheet of sterile cellophane, obviates the above difficulties and, in addition, presents the following advantages: (1) transparency; (2) ease of application; and (3) ease of removal.

An ordinary atomizer sprays the collodion, and thus furnishes a smooth sterile protective coating at the operative site. The rapid preparation of emergency surgery would emphasize its advantages.

This article is preliminary; a more complete study will follow further investigation.

TOURO INFIRMARY

New Orleans

A meeting of the Medical Staff was held on January 14, 1941.

The Clinico-pathologic Conference consisted of case reports. Six cases which represented various forms of heart disease were presented by Dr. Colvin and discussed by Drs. Wirth and Eshleman.

Following the Clinico-pathologic Conference, a presentation on rat bite fever was made by Dr. Charles Eshleman as follows: Rat bite fever is widespread, but exists chiefly in Japan, where it is said that about 3 per cent of the rats are infected. The organism is *Spirillum minus* described by H. V. Carter in 1887. Futaki and his co-workers in Japan in 1915 described the same organism and called it *Spirocheta morsus muris*. The former is the accepted name. Schottmueller, Blake and Tuminello, between 1914 and 1917, isolated a streptothrix from the lesion in cases of infection following a rat bite, but Col. Charles F. Craig warns against the possible error of confusing this condition and the organism with true rat bite fever.

The incubation period is one to six weeks. Usually the person is bitten by a rat at night during sleep. The wound heals; several weeks later the site of the bite becomes swollen, red and painful and a lesion develops very much like that seen following smallpox vaccination. Headache, severe chills, high fever and prostration occur, and lymphangitis and lymphadenitis in the region of the bite. Often an entire extremity becomes swollen, indurated and edematous. In a few days to one week, the high fever drops to normal and a period of remission occurs during which the patient feels quite well. After an interval of usually three to seven days, a sudden recurrence of chills and fever takes place. The patient may have six to 12 such paroxysms; the disease lasts several months if untreated. A maculo-papular eruption of the measles type often occurs during the first or second paroxysm. There is usually a leukocytosis of 10,000 to 20,000. The organism is rarely found in the blood stream, but can be demonstrated in scrapings from the initial lesion and in the material aspirated from inflamed lymph glands. The Wassermann is said to be positive in about 50 per cent of the cases. Rat bite fever was formerly rare in this country, but is becoming increasingly common.

We are greatly indebted to Dr. Rudolph Matas of this hospital who showed to this Staff about 1924, what was I think the first recognized case in this community. A most thorough and detailed description of the case and the disease was demonstrated. The case was later reported in the literature by Drs. Lanford and Lawson. Our hospital records show six cases have been admitted to Touro from 1924 to 1941 including Dr. Matas' original case and the one I am reporting tonight.

My patient was admitted recently, several weeks after having been bitten by a rat. She was partially asleep, but heard the rat scamper away. The lesion was red and swollen and tender on the outer, anterior surface of the left arm, near the bend of the elbow. The arm above this point was greatly swollen as far as the shoulder and there was marked tenderness and swelling of the glands in the axilla. Her chills and high spikes of temperature had developed about four weeks after being bitten and the lesion on the arm had developed

with the fever. Scrapings from the lesion showing the organism will be shown you by Dr. Colvin. The blood culture was negative. No very definite skin eruption was present. She remained in the hospital about a week and became free of fever without internal treatment, and it being during Christmas week, she was allowed to go home, but about 10 days later returned with her second bout of high fever and chills. She has had two doses of neoarsphenamine recently and you see by the chart that her fever has been promptly controlled and remained normal for the past several weeks. She should remain well under this treatment.

Dr. Howles stated that rat bite fever was used instead of malarial infections, in treating syphilitic conditions, but that the organism was hard to grow. It was more easily controlled in the human body than malarial infection, which was an advantage. The rash is atypical and may resemble any number of other rashes, drug rash, toxic rash and secondary syphilitic rash.

Dr. Holbrook had treated one case of syphilis with sodoku. However, with the intervention of fever cabinets, it is useless to use these infections for hyperpyrexia.

Dr. Charles J. Bloom stated he had two cases in 1930. He reported that in 1933, seventy cases had been reported in the United States, which represented 23 states and Canada. The mortality was 11.1 per cent.

Dr. W. Rogers Brewster stated he had seen three cases of rat bite fever; one case was treated as an acute abscess, and the swollen lesion was incised, which of course, did not lead to a speedy recovery. He stated salvarsan readily controlled the cases.

This concluded the scientific part of the meeting.

Drs. Collins and Wirth were elected to the Executive Committee from the Staff at large.

It was moved and passed by the Staff that a committee be appointed to erect a tablet in memory of Dr. J. A. Lanford.

The regular monthly meeting of the Medical Staff of Touro Infirmary was held Wednesday, February 12. The program consisted of a clinico-pathologic conference conducted by Dr. Harvey Colvin; three papers were presented, the first by Dr. Sidney Copland on bilateral double inguinal hernia, the second was some case reports on beriberi heart by Dr. Allan Eustis, and the third portion of the scientific program was a paper by Dr. John C. Weed on double ovarian malignancy following irradiation for carcinoma of the cervix.

David R. Womack, M. D., Sec.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

CALENDAR

March 3. Orleans Parish Medical Society Board of Directors, 8 p. m.
Clinico-pathologic Conference, Hotel Dieu, 8:15 p. m.
New Orleans Graduate Medical Assembly.

March 4. Eye, Ear, Nose and Throat Staff, 8 p. m.
New Orleans Graduate Medical Assembly.

March 5. Clinico-pathologic Conference, Charity Hospital Morgue Amphitheater, 1:30 p. m.
Hutchinson Memorial Clinic Staff, 8 p. m.
Mercy Hospital Staff, 8 p. m.
New Orleans Graduate Medical Assembly.

March 6. Joint meeting Orleans Parish Medical Society with the New Orleans Graduate Medical Assembly, 8 p. m.
Clinico-pathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.

March 11. Eye, Ear, Nose and Throat Society, 8 p. m.

March 12. Clinico-pathologic Conference, Charity Hospital Morgue Amphitheater, 1:30 p. m.
Touro Infirmary Staff, 8 p. m.
Woman's Auxiliary to the Orleans Parish Medical Society, Orleans Club, 3 p. m.

March 17. Hotel Dieu Staff, 8 p. m.
Clinico-pathologic Conference, Baptist Hospital, 8 p. m.

March 18. Charity Hospital Medical Staff, 8 p. m.

March 19. Clinico-pathologic Conference, Charity Hospital Morgue Amphitheater, 1:30 p. m.
Charity Hospital Surgical Staff, 8 p. m.
The Orleans Tuberculosis Hospital Staff, 8 p. m.

March 20. Clinico-pathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.

March 21. I. C. R. R. Hospital Staff, 12 noon.
New Orleans Dispensary for Women and Children Staff, 8 p. m.

March 24. Scientific Meeting Orleans Parish Medical Society, 8 p. m.

March 25. Baptist Hospital Staff, 8 p. m.

March 26. Clinico-pathologic Conference, Charity Hospital Morgue Amphitheater, 1:30 p. m.
French Hospital Staff, 8 p. m.

March 27. Clinico-pathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.

March 28. L. S. U. Faculty Club, 8 p. m.

During the month of February the Society held one regular scientific meeting, at which the following program was presented:

1. Case Report: Primary Carcinoma of the Liver
   By Dr. Samuel H. Colvin, Jr.
2. Symposium on Water Balance:
   a. Parenteral Fluid Therapy
      By Dr. Samuel B. Nadler
   b. Blood Volume as Modified by Disease
      By Dr. Roy H. Turner
   c. Therapeutic Problems in Water Balance from the Viewpoint of the Surgeon
      By Dr. Urban Maes and
      (by invitation) Dr. Harry A. Davis

TREASURER'S REPORT

Bank Balance, December 31, 1940	$3,701.23
January Credits	3,785.87
Total Credits	$7,487.10
January Expenditures	1,976.44
Actual Book Balance, January 31, 1941	$5,510.66

NEWS ITEMS

Drs. C. Grenes Cole, Daniel N. Silverman, P. T. Talbot, and Edwin L. Zander attended the reorganization meeting of the Bienville Parish Medical Society at Ringgold, December 17. Dr. Silverman presented a paper on "Common Errors in Gastric Diagnosis"; Dr. Zander spoke on "Uterine Cervix —Its Diseases and Their Treatment."

Dr. Charles C. Bass presented a paper entitled "Further Observations on the Specific Cause and the Nature of Quail Disease or Ulcerative Enteritis of Quail" at a meeting of the Southern Section of the Society for Experimental Biology and Medicine, December 20. Dr. Albert E. Casey spoke at the same meeting on "Diurnal Variation of the Blood Leukocytes in Normal Rabbits."

Dr. Donovan C. Browne was recently elected vice-chairman of the Gastro-enterologic Section of the Southern Medical Association.

Drs. W. C. Rivenbark and M. Lyon Stadiem attended the meeting of the St. Mary Parish Medical Society at Franklin, December 17. Dr. Rivenbark presented a paper on "Diarrhea in Infancy and Childhood"; Dr. Stadiem spoke on "Office Endocrinology."

Dr. Alton Ochsner read a paper on "Thrombophlebitis and Phlebothrombosis" before the West Texas Post-Graduate Medical Assembly in Abilene, December 20.

Dr. Edwin L. Zander presented a paper on "Office Gynecology" at the Fifth District Medical Society Meeting at Monroe, December 18. At the same meeting Dr. Daniel N. Silverman spoke on "Plasma Treatment in Gastrointestinal Diseases."

Dr. E. Z. Browne was elected president of the Stars and Bars Chapter of Alpha Omega Alpha, national honorary medical fraternity, at a meeting of this organization on January 10. Other officers elected were: Dr. W. P. Gardiner, president-elect; Dr. Joseph N. Ané, councilor; and Dr. Michael DeBakey, secretary-treasurer.

Dr. Theodore F. Kirn was installed as president of the staff of Mercy Hospital to succeed Dr. R. A. Oriol at a meeting of this group on January 9. Other officers inducted were: Dr. E. J. Richard, vice-president; Dr. N. J. Tessitore, secretary; and Dr. Clifford J. Vedrenne, treasurer. Drs. Charles Gelbke and R. A. Oriol were elected additional members of the board of directors.

Dr. Clarence P. May was recently appointed senior associate in the Department of Neurology at Touro Infirmary.

Dr. Walter J. Otis attended a meeting of the Military Mobilization Committee of the American Psychiatric Association in New York City, December 20-21. Dr. Otis also read a paper on "Diseases of the Basal Ganglia" before the twenty-first annual meeting of the Association for Research in Nervous and Mental Diseases in New York, December 20-21.

Dr. Henry W. E. Walther was elected president of the Friends of the Howard-Tilton Memorial Library of Tulane University of Louisiana at their organization meeting held January 10.

Dr. Julian Graubrath has been appointed pediatrician of the City Board of Health to succeed the late Dr. Frank Kinberger.

Edwin L. Zander, M. D., Sec.

LOUISIANA STATE MEDICAL SOCIETY NEWS

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
East Baton Rouge	Second Wednesday of every month	Baton Rouge
Morehouse	Second Tuesday of every month	Bastrop
Orleans	Second Monday of every month	New Orleans
Sabine	First Wednesday of every month	
Second District	Third Thursday of every month	

COMPONENT SOCIETY OFFICERS 1941

BOSSIER PARISH

President: Dr. D. C. McCuller, Bossier
Vice-President: Dr. W. F. Bell, Plain Dealing
Secretary-Treasurer: Dr. J. B. Hall, Benton

ST. TAMMANY PARISH

President: Dr. J. K. Griffith, Slidell
Vice-President: Dr. W. L. Stevenson, Covington
Secretary-Treasurer: Dr. H. E. Gautreaux, Covington

THIRD DISTRICT

President: Dr. J. J. Burdin, Lafayette
Vice-President: Dr. Henry Voorhies, Lafayette
Secretary-Treasurer: Dr. E. E. Guilbeau, Jr., Lafayette

ST. TAMMANY PARISH MEDICAL SOCIETY

A meeting of the St. Tammany Parish Medical Society was held at the Southern Hotel in Covington on Friday, January 31, at 8 p. m.

In the absence of the outgoing president and outgoing secretary, upon motion unanimously passed, Dr. F. F. Young was named acting president and Dr. H. E. Gautreaux, acting secretary. The minutes of the previous meeting were read and unanimously adopted. The scientific program was dispensed with due to the absence of the two essayists, and the election of officers for 1941 followed.

Our ex-Congressman, Dr. J. K. Griffith, of Slidell, who has been a charter member of the Society for twenty-eight years and who had been president several times previously, was unanimously elected president; Dr. Wm. L. Stevenson, vice-president; Dr. H. E. Gautreaux, secretary, and Dr. Roy Carl Young was named delegate to the State Medical Society with Dr. F. R. Singleton, of Slidell, alternate.

The next meeting will be held the second Wednesday in March for installation of the new officers.

NEW APPOINTMENTS AT L. S. U.

Dr. Chester Arthur Stewart, pediatrician and authority on childhood tuberculosis, has been appointed Professor and Head of the Department of Pediatrics in the Louisiana State University School of Medicine, effective July 1, 1941.

Dr. Stewart is a native of Missouri and received his A. B. degree from the University of Missouri in 1914, where he completed the first two years of the medical course. He transferred to the University of Minnesota where he received a Master's degree in Anatomy in 1915, a Ph.D. degree in Anatomy in 1917, and an M.D. in 1919. In 1921, he received a Ph.D. in Pediatrics. From 1914 to 1917, he served as Instructor in the Department of Anatomy at the University of Minnesota School of Medicine and, from 1917 to 1919, as Instructor in Pathology in the same institution. In 1920-21, he was a fellow in Pediatrics at the University of Minnesota. He was promoted to the position of Assistant Professor of Pediatrics in 1922 and is at present Clinical Professor of Pediatrics and Director of the Out-patient Department at the University of Minnesota. This is a part-time position and he takes care of a large pediatric practice as well.

Dr. Stewart is a member of the American Academy of Pediatrics, the American Medical Association, the National Tuberculosis Association, and the Northwestern Pediatric Society. In 1937, he represented the National Tuberculosis Association and the American Academy of Pediatrics at the Fourth International Congress of Pediatricians in Rome.

Several other appointments in the School of Medicine have been announced. They are Dr. Charles A. Bahn, named part-time Professor of Ophthalmology; Dr. Isidore Cohn, Professor of Surgery, part-time; Dr. Samuel Karlin, part-time Clinical Assistant in Surgery; Dr. E. R. Bowie, part-time Clinical Professor of Radiology and Director of the Department of Radiology; and Dr. Sam Levi, Lecturer in Radiology, also on a part-time basis. Dr. Fred King Vaughan was promoted to the position of part-time Assistant Professor of Obstetrics and Gynecology.

THE AMERICAN COLLEGE OF PHYSICIANS

The American College of Physicians has arranged a series of postgraduate lectures, demonstrations and clinics at various centers through-

out the United States. Ten of these courses will be given in all. Three will take place during February and will be for a duration of two weeks. These will be held respectively in St. Louis, New York City, and Rochester, Minnesota. Pre-meeting courses, coming just before the annual meeting, will be held April 21-25, and will be of varying duration from three weeks to one week. The centers for these courses will be Boston, Ann Arbor, Columbus, Ohio, Philadelphia and Washington. Courses are arranged primarily for Fellows and Associates of the College but will be open to others who are interested in internal medicine. The fee for the course is $20 for each week. Further information may be obtained from E. R. Loveland, executive-secretary, 4200 Pine Street, Philadelphia, Pennsylvania.

Applications for examinations for the position of Senior Medical Officer, $4,600 a year, Medical Officer, $3,800 a year, and Associate Medical Officer, $3,200 a year, in the Public Health Service, Federal Security Agency; Food and Drug Administration, Federal Security Agency; Veterans' Administration, Civil Aeronautics Administration, Department of Commerce; and Indian Service, Department of the Interior, must be filed with the United States Civil Service Commission, Washington, D. C.

NEW BOARD OF HEALTH

The new Board of Health met in the office of the State Health Department on Friday, February 7, with the following members present: Dr. J. E. Knighton, of Shreveport; Mrs. C. R. Cline, of Lake Charles; Mr. V. C. Cupp, of Ruston; Dr. E. B. Vickery, of New Orleans; Mr. A. Bruce Mouton, of Maurice; Dr. L. J. Schoeny, of New Orleans; Mr. Monte M. Lemann, of New Orleans. The other member of the Board, Dr. King Rand of Alexandria, was unable to be present. The new members elected Dr. Vickery chairman, Dr. Knighton vice-chairman, and Dr. Schoeny secretary. The Board was given a complete and detailed picture of the workings of the State Board of Health and then passed on certain matters of administrative importance. The Board plans to meet four times a year, on the second Friday in January, April, July, and October.

A. M. A. LOAN COLLECTION

The American Medical Association has a large collection of hygiene material. There are collections available on 82 topics and with these go a speaker's outline. A collection may be borrowed for a ten day period without cost. Any physician having to talk before a group of lay individuals on such subjects as the family medicine chest, first-aid, growing old gracefully, infantile paralysis, menstruation and the menopause, narcotics, to select a few of the subjects in the collection, could make use of this material.

The complete list of the subjects is on file in the Journal office.

THE SOUTHEASTERN SURGICAL CONGRESS

This Congress will be held in Richmond, Virginia, March 10-12, with headquarters at the Hotel John Marshall. A most interesting program has been arranged for this meeting which will be presided over by Dr. Irvin Abell. The speakers come not only from the South but also from the North and West. The C. Jeff Miller Lecture will be delivered by Dr. F. H. Lahey, president of the American Medical Association. The title of his address will be "The Surgical Treatment of Gastric, Duodenal and Jejunal Lesions."

1941 JOHN PHILLIPS MEMORIAL AWARD

On the recommendation of the Committee on Fellowships and Awards, the Board of Regents of the American College of Physicians, by unanimous resolution, has voted that the John Phillips Memorial Medal for 1941 be awarded to Dr. William Christopher Stadie, Associate Professor of Research Medicine at the University of Pennsylvania, Philadelphia, for his significant chemistry of hemoglobin, and more especially for his recent studies on the subject of fat metabolism in diabetes mellitus.

This award was established by the College, October 27, 1929, to be given periodically for some outstanding piece of work in internal medicine. Internal medicine in this instance is interpreted to include not only clinical science, but all of those subjects which have a direct bearing upon the advancement of clinical science. The work must have been done in whole or in part in the United States or in Canada.

Nominations for the award are made to the Committee on Fellowships and Awards of the American College of Physicians. The recipient must file with the College a written account of his work, and present his results as a paper before the next annual session, at which time the award of a bronze medal is made by the president of the College.

NEWS ITEMS

Acting Governor Dr. Marc M. Mouton has announced the appointment of Dr. Leon J. Menville as a member of the State Board of Medical Examiners. Dr. Menville did serve for many years on this Board and is a well qualified man to succeed Dr. C. Grenes Cole who is retiring from the Board.

Dr. Mouton announced also the appointment of Dr. C. Walter Mattingly as a member of the State Nurses Board of Examiners to succeed Dr. M. H. Foster, of Alexandria, who is now the director of the hospital at Pineville.

At a meeting of the Rapides Medical Society held February 3, the organization practically unanimously endorsed the resolution presented by Dr. Barber urging the Mayor and the City Council to assist in establishing an Alexandria-Rapides Parish Health Unit.

DR. S. F. MIOTON

Dr. S. F. Mioton was killed accidentally by being hit by an automobile Sunday, February 9, Dr. Mioton, a graduate of Tulane University, at one time was assistant coroner of Orleans Parish.

MEDICAL CARE

A new journal, published under the auspices of the Bureau of Research in Medical Economics and called *Medical Care*, will shortly make its appearance. The advance notice of its publication calls attention to several articles: One concerns the care of air raid victims; another by Dr. Nathan Van Etten is entitled "Preparedness through Fitness." Still another is on the cost of physicians' services under a voluntary health insurance plan, by Helen Hershfield Avnet of the Group Health Cooperative, New York.

There is a group of forty-five editorial advisors for this new journal.

The U. S. P. H. S. announces a new department of the National Institute of Health to be known as the Division of Chemotherapy under the direction of Surgeon W. H. Sebrell who will have associated with him Dr. Harris Isbell. This division is set up for the purpose of facilitating research in the new sulfanilamide products and new synthetic drugs with anti-malarial properties, and to extend the work relating to opium and morphine derivatives. The research work on nutritional problems will still be continued.

The attention of the medical professsion is directed to the appearance of a special issue of Harofe Haivri (The Hebrew Medical Journal), a semi-annual publication, edited by Dr. Moses Einhorn. This volume commemorates the thirteenth anniversary of this journal and is dedicated to Prof. Sigmund Freud.

The founders had faith in the vitality and growth of modern Hebrew and foresaw that a Hebrew medical publication would be of inestimable value in the development and advancement of Hebrew medical literature; also, it has proved to be of particular service to the medical department of the Hebrew University in Jerusalem.

INFECTIOUS DISEASES IN LOUISIANA

The morbidity report of the Bureau of Epidemiology of the Louisiana State Board of Health for the week ending January 18, the third week of the year, showed that influenza was by far the most important disease numerically with 2,164 cases listed. Other diseases in numbers greater than ten included 112 cases of syphilis, 58 of pneumonia, 28 of pulmonary tuberculosis, 20 of cancer, 12 of gonorrhea, and 11 of typhoid fever. During this week there were two cases of poliomyelitis, one from Bossier and one from Rapides; there was one case of typhus fever, two of tularemia, and one of undulant fever. Four of the typhoid fever cases came from East Baton Rouge Parish. The influenza epidemic was decidedly on the wane according to the statistics reported for the week ending January 25, 660 cases being reported, followed by 236 of syphilis, 72 of pneumonia, 38 of hookworm, 30 of gonorrhea, 27 of pulmonary tuberculosis, 11 each of cancer and chickenpox, and 10 of scarlet fever. Tensas Parish reported two cases of poliomyelitis this week. For the fifth week of the year, which closed February 1, there was another marked drop in the influenza cases, there being only 308 reported for this week. However, the 72 pneumonia cases reported was up to double the five year average for this particular week. Other diseases reported in double figures included 99 cases of syphilis, 41 of gonorrhea, 25 of pulmonary tuberculosis, 16 of hookworm infestation, 14 of septic sore throat, and 13 of cancer. In this week a case of poliomyelitis was discovered in Claiborne and two cases of typhus fever in Orleans Parish and three of tularemia. For the week ending February 8, the sixth week of the year, only 218 cases of influenza were reported, whereas there were 356 cases of syphilis. This latter disease obtained this week its usual position at the head of the list. There were only five diseases in addition to these two which appeared in figures greater than ten, including 81 cases of hookworm, 39 of pneumonia, 26 of gonorrhea, 17 of pulmonary tuberculosis, and 15 of cancer. Two cases of typhus fever were discovered this week in Ascension and Avoyelles, and, strange to say, two cases of smallpox, one each in Caddo and St. Tammany.

HEALTH OF NEW ORLEANS

The Bureau of the Census, U. S. Department of Commerce, reports that for the week ending January 11, there were 162 deaths in the City of New Orleans, divided 111 white, 51 negro, and 11 infants. This is a remarkably low incidence of death in the city considering the many hundreds of influenza cases which were prevalent at that time. This indicates quite definitely that the epidemic was of minor importance in so far as severity and morbidity are concerned. In the week of January 18, 192 deaths were listed, divided racially 112 white and 80 negro. Fourteen were in children under one year of age, practically three-quarters of which were negro babies. For the week ending January 25, 187 of the citizenry of New Orleans expired; of these, 130 were in the white and 57 in the negro races. Fifteen of the deaths were in children under one year of age.

In spite of the epidemic of influenza which was prevalent throughout the state in the month of January, the death rate remained under the three year average for the corresponding weeks of the month. For the next week, terminating February 1, 1941, of the 166 reported deaths, 13 were in children under one year of age and the racial distribution was 99 white and 67 negro.

WOMAN'S AUXILIARY

Louisiana State Medical Society

President—Mrs. Roy Carl Young, Covington.

President-elect—Mrs. Aynaud Hébert, New Orleans.

First Vice-president—Mrs. Joseph E. Heard, Shreveport.

Second Vice-president—Mrs. W. A. Ellender, Houma.

Third Vice-president—Mrs. M. H. Foster, Alexandria.

Fourth Vice-president—Mrs. C. P. Gray, Monroe.

Treasurer—Mrs. M. C. Wiginton, Hammond.

Recording Secretary—Mrs. P. A. Donaldson, Reserve.

Corresponding Secretary—Mrs. Herbert Cannon, Covington.

Subscribe to the *Bulletin*, the official publication of the Woman's Auxiliary to the American Medical Association; issued quarterly, $1 a year. Send subscriptions to Mrs. H. E. Christenberry, Highland Drive, Knoxville, Tenn., or the State Bulletin Chairman, Mrs. Jules M. Davidson, 5133 St. Charles Avenue, New Orleans.

PUBLIC RELATIONS

I have the pleasure and privilege of serving as Public Relations Chairman with Mrs. Roy Carl Young's administration this year, and I am writing this article to urge all parish presidents and public relations chairmen to put forth an effort to accomplish something worthwhile in this very important phase of our work. If you have not already appointed a Public Relations Chairman, please appoint one at your next meeting in order that she may have time to send in a report of any activity before the April meeting in Shreveport.

As we all know, Public Relations Committees are simply to create good will for an organization and build for the public a correctly informed opinion of our aims. I have prepared and mailed an outline or questionnaire for each chairman in order that she may keep an accurate record of all work for public relations and add anything I have omitted.

With the National Defense Program in full swing the medical profession has a better opportunity than ever before to awaken the masses to the unselfish work done by our doctors. Also, to make clear its vast possibilities. Thousands of doctors are doing active military service while countless others are serving on draft and service boards at home, thus causing the medical profession to contribute its part to patriotism in a big way.

Thanking each and everyone for any interest or cooperation with me on this committee,

Sincerely yours,

Mrs. John David Frazar,
Public Relations Chairman.

NEWS OF LOCAL AUXILIARIES

CADDO PARISH

The Woman's Auxiliary to the Shreveport Medical Society entertained at a Christmas dinner party at the Shrine Club, which was attended by a large group of doctors and their wives.

The reception room was decorated with greens and candles, and in the banquet room the large E-shaped table was appointed in a red and white scheme, carrying out the theme of carnations in the snow. In the center of each table was a large mound of cotton snow from which extended an arrangement of red carnations, and tall red tapers carried out the color scheme further.

Mrs. J. M. Gorton served as mistress of ceremonies and presented a Dr. I. Q. program, Christmas carols, and the Virginia Reel.

SECOND DISTRICT

The regular monthly meeting of the Second District Medical Society was held at the home of Mrs. J. J. Massony in Westwego on January 21 with Mrs. J. Earle Clayton presiding.

Mrs. S. L. Gill, of Norco, Red Cross Chairman, distributed layette garments to be made.

Mrs. Robert Sharp, of Metairie, was appointed Membership Chairman.

Plans are under way for a gala Doctors' Day celebration with Mrs. P. A. Donaldson, of Reserve, acting as chairman.

Delicious and dainty refreshments were served by the hostess. Among those enjoying her hospitality were Mmes. Clayton, Clark, Sharp, Gill, Guillotte, LaBruyère, and Donaldson.

Mrs. P. A. Donaldson,
Publicity Chairman.

OUACHITA PARISH

The Woman's Auxiliary to the Ouachita Parish Medical Society held its monthly luncheon and business meeting on Thursday, January 9, at the Lotus Club. The hostesses at this time were

Mmes. Coon, Graves, and O'Donnell; Mrs. A. D. Tisdale presided.

Mrs. John Pracher read pieces from the *Bulletin*. Mrs. A. G. McHenry gave an article on "Blood Plasma" from the *Hygeia* magazine.

Mrs. John H. Parrott, who just recently moved to Monroe, was introduced to the auxiliary.

It was decided that our next meeting be a dinner and the doctors are to be invited.

Mrs. C. B. Flinn,
Publicity Chairman.

Respectfully submitted,
Mrs. Jonas W. Rosenthal,
Press and Publicity Chairman.

BOOK REVIEWS

The Rôle of the Liver in Surgery: By Frederick Fitzherbert Boyce, M. S., M. D. Springfield, Charles C Thomas, 1941. Pp. 365. Price $5.00.

In this monograph the winner of the quinquennial Samuel D. Gross prize for research in surgery integrates the clinical and experimental observations upon which present concepts of the rôle of the liver in surgical practice are based. Case histories illustrative of various liver disturbances are discussed in relation to bedside, operative theater, and laboratory studies made by the author, or reported by others.

In addition to considering the changes in liver structures and function which are associated with biliary tract disease, the liver factor in other surgical diseases, such as hyperthyroidism, is presented. Special chapters are devoted to latent hepatic dysfunctions, and the "liver weakling;" the hemorrhagic diathesis in jaundice; "liver death" and the "hepatorenal syndrome"; autolytic peritonitis; and experimental observations and clinical possibilities in respect to the occlusion of the portal vein.

The numerous tests, including the author's serum volume index test, which have been devised for determining bleeding tendency, and those for estimating the manifold functions of the liver, are presented and evaluated. In reviewing the tests for liver function, special consideration is given to those which are used in conjunction with modern methods of conditioning the liver in preparation for major surgical operations. In a section devoted to studies in biliary tract disease by the Quick hippuric acid test of liver function, this test and serum bilirubin tests are compared.

The chapter on treatment includes discussions of the use of glucose, vitamin K and other vitamins, transfusions, oxygen, and dehydrocholic acid, as well as special points in surgical technic, including common duct drainage, cholangiography, gradual decompression of the biliary tract, and non-suture of the gallbladder fossa and cholecystectomy.

The book contains 44 illustrations, consisting of photomicrographs of liver tissue, charts, and graphs. In an appendix, the physiology of the liver is reviewed. This carefully edited book is well indexed according to subjects and there is also an extensive name index.

AMBROSE H. STORCK, M. D.

Manson's Tropical Diseases: Edited by Philip H. Manson-Bahr, C. M. G., D. S. O., M. A., D. T. M. and H. Cantab., F. R. C. P. Lond. Baltimore, Williams and Wilkins Co., 1940. Pp. 1083. Price $11.00.

The eleventh edition of the well-known standard work originally prepared by Sir Patrick Manson is revised and edited by a well known British authority on tropical medicine.

One may say that this work continues to be a very valuable source of information and that the revision before us incorporates most of the advances of the recent past but does not always omit the obsolete. The volume consists of 1043 pages, excluding the index, and is divided into ten sections, each dealing with a group of diseases and an appendix of two sections; one devoted to medical zoology, the other to laboratory methods.

In a chapter on "Life in the Tropics" in its general aspects, the subject of acclimatization is dealt with briefly and the view set forth that the white race cannot long survive or multiply in a pure state in the tropics, though some striking exceptions are noted. It is suggested that European children after four or five years of tropical residence should be sent to a temperate climate to be educated. In connection with the use of alcohol, the opinion is expressed that a healthy adult male can deal satisfactorily with about 1½ ounces of alcohol daily, preferably as a "sun downer", and in the same paragraph, while noting differences of opinion, the majority view is to regard alcohol as beneficial.

Malaria as the most important tropical disease is treated fully and there is a very satisfactory section on preventive aspects. Quinine prophylaxis is regarded as advisable, though it is pointed out that there is much evidence against this view.

In a classification of the typhus (p. 252) group of fevers, Rocky Mountain spotted fever is listed as equivalent to tick-borne typhus, — a grouping that ignores some important features of the difference between typhus and Rocky Mountain spotted fever. In the same tabulation the squirrel and the woodchuck are listed as reservoirs for the virus of Rocky Mountain spotted fever; so far as the reviewer is aware this never has been proved. The geographic distribution of Rocky Mountain spotted fever is incomplete.

Under plague the observation is made that the plague organism is hard to find in the feces by direct observation—why any one should seek it there is not made clear (p. 278).

On page 281 is an extraordinary statement regarding plague in farm animals, — a heritage of views long since discredited.

Under the differential diagnosis of plague (p. 292) the statement is made that tularemia may resemble plague. The reviewer doubts that this is of frequent occurrence. Mercurochrome (p. 293) is reported to have given encouraging results in the treatment of plague; a statement which must be evaluated in the light of the author's belief in the value of this drug in various septicemic conditions.

The discussion of tularemia fails to recognize (p. 305) the work of Wherry in establishing the first human case of the disease, and the division of the cases by clinical types is hardly mentioned. The author (p. 306) regards the prevention of tularemia as simple, laying stress on the wearing of rubber gloves by those likely to be exposed. Practically the prevention of this disease is by no means easy.

Undulant fever is discussed under infections of the melitensis type and separately under those of the abortus type. The bacteriologic phases of both organisms are well covered. Under prophylaxis (p. 320) there is a warning to avoid insect bites, — the necessity for this warning is not clear to the American reviewer.

Under the heading of "pock diseases" (p. 408) the statement is made that smallpox of the classical type is confined almost entirely to tropical and sub-tropical countries. In making this restriction Dr. Manson-Bahr generously overlooks some glaring exceptions of the relatively recent past. In "A Note on the Treatment of Variola" the editor suggests (a) sulfanilamide (p. 411) on the ground that the mortality "is largely due to secondary pyogenic infection of the respiratory tract", and (b) "large doses of concentrated multivalent antistreptococcal serum." The reviewer doubts the soundness of this advice, especially as relates to the serum. The author also suggests further trial of antivaccinial serum. Alastrim is treated as a separate entity, though "variola minor" is given as a synonym and the statement made that vaccination is highly protective against alastrim.

Under amebic hepatic abscess (p. 555) the author states that this is the most frequently overlooked of the grave tropical diseases, — a serious indictment of our diagnostic abilities, but doubtless one well founded.

The author (p. 599) apparently overlooks the importance of geographic location as an important factor in the communicability of leprosy, but he believes that the clinical type is influenced by climate. The author holds to the view which the reviewer considers correct, that leprosy of itself may give a positive serologic test for syphilis. A much needed word of caution is provided in assessing the value of therapeutic agents in leprosy. Under the prophylaxis of this disease the experience in the segregation in the Philippines is mentioned, and the reviewer believes a too optimistic picture is drawn.

The author is convinced that neurasthenia is of great importance and considers it identical with anxiety psychoneurosis (p. 650) which develops in temperate climates. Hard mental and physical work are regarded as likely to hinder development of neurasthenia rather than the reverse. Removal to a cool climate is the essential feature of successful treatment (p. 693).

The National Institute of Health anal swab (miscalled a sprayer) for the diagnosis of *Enterobius vermicularis* infection is mentioned but the reader is given no idea of its appearance or manner of use (p. 943).

The statement that "sitting upon a night commode containing steaming hot water is said to entice the tapeworm down the bowel and render the head more easily detachable" seems sufficiently illogical to merit mention (p. 822).

Contrary to the statement in the book, it has been definitely demonstrated that monkeys do give positive reactions for amebiasis (p. 534). Under neither technic nor diagnosis of amebiasis is there a description of the zinc sulphate centrifugal flotation technic for the detection of protozoan cysts and helminth eggs and larvae.

There are many examples of carelessness of proof reading; thus Parker is given as Parkes (p. 303) and *Filaria malayi* is spelled with a "z" (malazi) (p. 775).

These and so many other examples of inadequate handling of details might be pointed out, that one is left with the feeling that much more care should have been taken in the preparation of the volume. Nevertheless, the book probably is as satisfactory a treatise on tropical diseases as is to be found in English.

G. W. McCoy, M. D.

Complete Guide for the Deafened: By A. F. Niemoeller, A. B., M. A., B. S.; foreword by Harold Hays, M. D., F. A. C. S. New York, Harvest House, 1940. Pp. 256. Price $3.00.

In the foreword, Harold Hays points out that a revolutionary change in the treatment of deafness has taken place in the last thirty years, concerned largely with the attempt at actual rehabilitation of the handicapped, deafened individual.

Niemoeller says: "This book is intended to help the hard of hearing to help themselves; to supply information, leads, and hints on how to go about bettering their condition after medicine has done

all it can for them. . . . . The book is definitely not a manual for the self-treatment of the ear."

There is much interesting, readable, and on the whole accurate, information contained in the seventy-seven short chapters. It will be a useful help to the deafened individual.

H. L. KEARNEY, M. D.

Modern Dermatology and Syphilology: By S. William Becker, M. D., and Maxmillian E. Obermayer, M. D. Philadelphia, J. B. Lippincott Company, 1940. Pp. 871; pl. Price $12.00.

This recent textbook in English on dermatology presents a different approach to the subject matter in a new style, and gives up-to-date information which has been slow to appear in the more orthodox texts. Becker and Obermayer have written their text in a "modern" style, and have used clear and simple language. Their classification of diseases of the skin differs from the encyclopedic arrangement of most texts. Emphasis has been placed upon subjects considered important by the authors, and certain rarer dermatoses, as well as tropical diseases of the skin, have been omitted.

One feature of this modern book which greatly enhances its value is the introduction to each chapter, termed "Orientation," which, as the authors state, is an intimate approach of the demonstrator to the reader. Another feature is the clear-cut language used in the discussions on treatment, which enables the student or practitioner to get the authors' ideas in a short and concise space.

There is a personal touch throughout the text. The Standard Classified Nomenclature of Diseases is used; illustrations are numerous and well selected. The chapters on general therapy and on syphilis and the neurodermatoses are modern. All in all, this text is a desirable addition to the book shelf of texts on dermatology and will prove to be equally valuable as a reference text for the dermatologist, the student, and the practitioner.

M. T. VAN STUDDIFORD, M. D.

Proctoscopic Examination and Diagnosis and Treatment of Diarrheas: By M. H. Steicher, M. S., M. D. Springfield, Ill., Charles C Thomas, 1939. Pp. 149. Price $3.00.

This compact edition contains a brief discussion of the various types of diarrhea. The first part of the book has to do with the armamentarium and technic of a proctoscopic examination. In the second part, the diagnosis and treatment of the more common forms of diarrhea are outlined.

The subject matter included in this small volume has been accurately and more completely covered in other well-known books. It should appeal to only a few who are interested in a brief summary of the subject.

WARREN H. HÉBERT, M. D.

Simplified Diabetic Manual; With 163 International Recipes: By Abraham Rudy, M. D., New York, W. Barrows & Co., Inc., 1940. Pp. 216. Price $2.00.

Diabetes is described in a simplified and easily readable manner, for the benefit of the patient. The predisposing causes such as heredity, obesity and infection are discussed in full. Such important social problems as marriage and pregnancy are presented in an accurate and understandable manner. Emphasis is placed on the importance of diet and the necessity of adequate vitamin intake.

The more common complications, coma and insulin reaction, are described, and means of prevention as well as treatment of these conditions are explained. The procedures of insulin injection and urine examination for sugar are discussed.

The book contains tables of food values, and recipes for dishes of many nationalities.

NORTON VOORHIES, M. D.

Electrocardiography: By C. C. Maher, M. D., B. S., and P. H. Wosika, M. D., M. S. Baltimore, Williams & Wilkins Co., 1940. Pp. 341. Price $4.00.

In this third edition errors of the others have been corrected. Tracing of the fourth lead has been adopted as standard procedure and appears in many of the diagrams in the book. Serial tracings in acute coronary thrombosis are featured. An effort to utilize the standard nomenclature advocated by the American Heart Association is made by the authors.

The method of presentation is interesting and tends greatly to simplify and clarify the subject, and those in the know say the book in this edition is quite correct.

I. L. ROBBINS, M. D.

Gynecological and Obstetrical Pathology: By Emil Novak, A. B., M. D., D. Sc. (Hon. Dublin), F. A. C. S. Philadelphia, W. B. Saunders Co., 1940. Pp. 496. Price, $7.50.

This excellent text fills the need created when Frank's splendid monograph on the subject, first issued in 1922, began to become antiquated. In the interval no really worth-while single volume on gynecologic and obstetric pathology has appeared, and this volume of Novak's, long awaited, fills a definite need.

The pathology of all but a few of the rarer lesions of the female genital tract is to be found sufficiently covered in this monograph, for general reference and study. The chapters on special ovarian tumors are extensive, and especially interesting in view of the author's work in the field.

The arrangement of material follows the anatomic method with pathology of the vulva, vagina, cervix, endometrium, uterus, tubes and ovary discussed in that order, being preceded by a chapter on the endocrinology of the menstrual cycle and pregnancy, and followed by chapters on ectopic

pregnancy, pelvic endometricus, implantation and placentation, and placental pathology.

This volume should find a welcome place in the library of those interested in obstetrics, gynecology and pathology.

B. BERNARD WEINSTEIN, M. D.

Arthritis: By Bernard I. Comroe, A. B., M. D., F. A. C. P. Philadelphia, Lea and Febiger, 1940. Pp. 752. Price, $8.50.

The author has attempted to bring to the student and to the general practitioner the most modern conception of the diagnosis, treatment and prognosis of this too common disease. There are few important details not properly explained. The concrete abstract of every chapter is most helpful in assisting one to secure, in a simple form for immediate use, the chief factors concerned, which is a great help. The openmindedness in which the great problems of arthritis are herewith reviewed, indicates the sound conception of the author in regard to so-called "specifics" for the disease. Yet he is able, from his experience, forcibly to indicate the best form of approach in the diagnosis and treatment, supported by a large bibliography of books and articles by writers well qualified to speak on this broad subject.

Certainly one could therefore recommend this work to all students, physicians, or specialists, who so often need such a ready reference to handle these arthritic cases properly.

P. T. TALBOT, M. D.

A Synopsis of Surgical Anatomy: By Alexander Lee McGregor, M. Ch. (Edin.), F. R. C. S. (Eng.). Baltimore, The Williams and Wilkins Company (A William Wood Book), 1939. Pp. 664; 648 figs. Price, $6.00.

When a book goes through several editions, the inference is unmistakable: Those who have used it have approved it. The fact that *Synopsis of Surgical Anatomy* has reached its fourth edition within seven years—it was first published in 1932—is an indication of the solid worth of this small book. As Dr. Raymond A. Dart, Professor of Anatomy and Dean of the Faculty of Medicine of the University of the Witwatersrand, has pointed out in the introduction, the author has made no claim for completeness in the book, but has "rightfully pointed out its usefulness." Its purpose, Dr. Dart continues, is to correlate the dissecting room with the practice of medicine and surgery.

There seems no doubt that the author has succeeded in his purpose. The book is not intended for students, as the author states specifically in his preface, for it makes no attempt to deal exhaustively with the anatomy of the whole body. It is, however, a convenient ready reference book for the graduate student or the practitioner. The material is highly selective, but the choice has usually been wise, the emphasis is correct, and the point of view is always practical.

As to the necessity for a text of this sort, Dr. Dart also makes that clear in his introduction. The human brain, he says, is supposed to be able to absorb 200,000 distinct facts. If that is true, then the student absorbed in the monumental study of anatomy would have no mental room for anything else; hence books such as this.

The author has made no changes of great consequence in this fourth edition, as a comparison with the third edition shows. The subject matter is still divided into normal and abnormal anatomy, and each chapter is still complete in itself. The use of the book as a reference text is thus greatly simplified. The illustrations, practically all of which seem to be carried over from earlier editions, are excellent.

The inclusion of the section dealing with the anatomic bases of clinical tests is perhaps open to criticism. The section is necessarily incomplete, and therefore somewhat misleading. Palpation of the kidneys, spleen, gallbladder and other organs can scarcely be considered tests, and the roentgenologic findings in intussusception, for instance, do not seem to belong in a textbook of anatomy. The space occupied by this section might profitably be devoted to other, more strictly anatomic matters.

FREDERICK FITZHERBERT BOYCE, M. D.

PUBLICATIONS RECEIVED

American College of Physicians, Philadelphia: The American College of Physicians—Its First Quarter Century, by William Gerry Morgan, M. D., LL.D., Sc. D., M. A. C. P.

Lea & Febiger, Philadelphia: Diseases of the Digestive System, edited by Sidney A. Portis, B. S., M. D., F. A. C. P. The Extra-ocular Muscles, by Luther C. Peter, A. M., M. D., Sc. D., F. A. C. S., LL.D. A Manual of the Common Contagious Diseases, by Philip Moen Stimson, A. B., M. D. Heart Failure, by Arthur M. Fishberg, M. D. Principles of Hematology, by Russell L. Haden, M. A., M. D. The Therapy of the Neuroses, by Samuel Henry Kraines, M. D.

W. B. Saunders Company, Philadelphia: Electrocardiography in Practice, by Ashton Graybiel, M. D., and Paul D. White, M. D.

Charles C Thomas, Springfield, Illinois: Age Morphology of Primary Tubercules, by Henry C. Sweany, M. D.